JVC

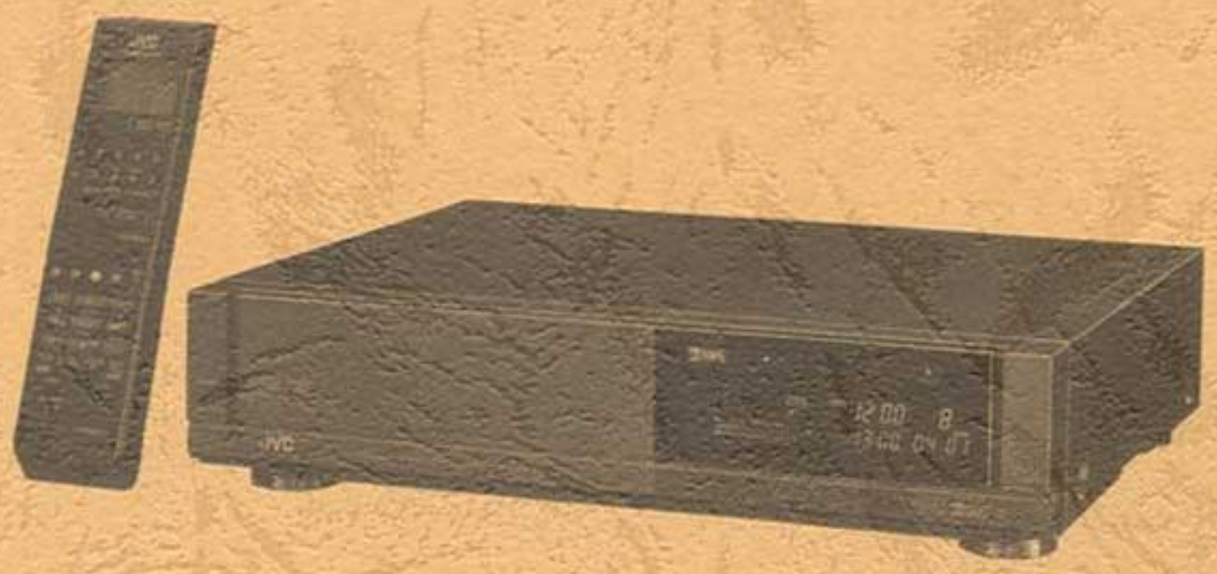
SERVICE MANUAL

Hi-Fi STEREO VIDEO CASSETTE RECORDER

HR-S5500E/EG

S-VHS 625 VHS PAL

HQ High Quality



SPECIFICATIONS

GENERAL

Power requirement		: 220 V~, 50/60 Hz
Power consumption		: 45 W
Temperature		: 5°C to 40°C (Operating) -20°C to 60°C (Storage)
Operating position		: Horizontal only
Dimensions (WxHxD)		: 435 x 105 x 380 mm
Weight		: 7.4 kg
Tape format		: S-VHS/VHS PAL standard
Tape width		: 12.65 mm
Tape speed	(SP)	: 23.39 mm/sec
	(LP)	: 11.70 mm/sec
Maximum recording time	(SP)	: 240 min. with E-240 video cassette
	(LP)	: 480 min. with E-240 video cassette

VIDEO

Signal system	: PAL colour and separated Y/C signals, 625 lines/50 fields
Recording system	: Rotary two-head helical scan system with slant double-azimuth combination video heads
Input	: 0.5 to 2.0 Vp-p, 75 ohms, unbalanced
Output	: 1.0 Vp-p, 75 ohms, unbalanced
Signal-to-noise ratio	: 43 dB (Rohde & Schwarz noise meter) with picture sharpness control at centre position
Horizontal resolution	: More than 400 lines (S-VHS)/ 250 lines (VHS) with picture sharpness control at centre position

AUDIO

Recording system	: Longitudinal track
Input	: Mic: -67 dBs, high impedance, unbalanced : AUDIO EING. connector (RCA x 2): -8 dBs, 50 k-ohms, unbalanced : A/V1 EING./AUSG. and A/V2 EING. socket (21-pin Peri connector): -3.8 dBs (CENELEC standard), 10 k-ohms, unbalanced
Output	: A/V1 EING./AUSG. socket (21-pin Peri connector): -3.8 dBs (CENELEC standard), high impedance load : AUDIO AUSG. connector (RCA x 2): -6 dBs, high impedance load, less than 1 k-ohm, unbalanced (100 k-ohms, load)
Frequency range	: 70 Hz to 10,000 Hz

Hi-Fi AUDIO

Recording system	: Deep-layer recording system conforming to stereo Hi-Fi VHS standard
No. of audio channels	: 2 Hi-Fi audio channels 1 normal audio channel
Frequency response	: 20 Hz to 20,000 Hz
Dynamic range	: More than 90 dB
Wow and flutter	: Less than 0.005 % WRMS

TUNER

Tuning system	: Frequency synthesized tuner
TV channel storage capacity	: 48 positions (+ AUX position "AU")
Channel coverage	: VHF 47 – 111 MHz 111 – 300 MHz UHF 470 – 862 MHz
Aerial output	: UHF channel 36 (adjustable 32 – 40)

TIMER

Clock reference	: Quartz-crystal
Programm	
Memory	

ACCESS

Provided

Optional

Specificat
Design an

JVC Spitzer Electronic AG CH-4104 Oberwil
ORIGINAL SPARE PARTS AI 237

Ihre Bestellung/Votre commande

JVC Ersatzteil-Nr./No pièce détachée JVC: SM-HRS5500E
Modell/Modèle: HRS5500E

Bezeichnung/Nom de la pièce: SERVICE MANUAL
Anzahl/Quantité: 1

Kunden-Nr./No client
Auftr.-Nr./No comm.
Stock: 000M-10732

September 1989

NOTE: For a technical description, please refer to Technical Guide VTG82049 HR-S5500 PAL.

TABLE OF CONTENTS

Section	Title	Page
	Important Safety Precautions	
	INSTRUCTIONS	
	1. DISASSEMBLY AND MECHANISM ADJUSTMENTS	
1.1	DISASSEMBLY	1-1
1.1.1	External covers	1-1
1.1.2	Circuit boards	1-2
1.1.3	Disconnecting the flat wire	1-3
1.2	MECHANISM ADJUSTMENT	1-4
1.2.1	Check without cassette housing	1-4
1.2.2	Check without cassette housing	1-4
1.2.3	Manually removing cassette tape	1-4
1.2.4	Test equipment	1-4
1.3	MAIN MECHANISM PARTS	1-5
1.4	INSPECTION AND MAINTENANCE	1-7
1.4.1	Suggested servicing schedule for main components	1-7
1.5	MAIN ASSEMBLY REPLACEMENT	1-8
1.6	ASSEMBLY PROCEDURE OF MECHANISM	1-10
1.7	CONFIRMATION AND ADJUSTMENT	1-12
1.8	TAPE TRANSPORT CHECKS AND ADJUSTMENT PREPARATIONS	1-13
1.9	INTERCHANGEBILITY CHECKS AND ADJUSTMENTS	1-14
	2. ELECTRICAL ADJUSTMENTS	
2.1	PREPARATION	2-1
2.1.1	Required test equipment	2-1
2.1.2	Check and adjustment steps	2-2
2.2	SWITCHING REGULATOR CIRCUIT	2-3
2.3	TIMER CIRCUIT	2-3
2.4	SERVO CIRCUIT	2-4
2.5	VIDEO CIRCUIT	2-5
2.6	AUDIO CIRCUIT	2-12
2.7	TUNER/IF CIRCUIT	2-13
2.8	DEMODULATOR CIRCUIT	2-15
2.9	PRE/REC CIRCUIT	2-16
	3. CHARTS AND DIAGRAMS	
3.1	CIRCUIT BOARD LOCATIONS	3-1
3.2	MAIN TYPES OF ACTIVE AND PACKAGE CIRCUITS	3-2
3.3	POWER SYSTEM BLOCK DIAGRAM	3-3
3.4	BOARD INTERCONNECTIONS	3-4
3.5	SERVO BLOCK DIAGRAM	3-6
3.6	MECHACON BLOCK DIAGRAM	3-7
3.7	VIDEO BLOCK DIAGRAM	3-8
3.8	PRE/REC AMP BLOCK DIAGRAM	3-10
3.9	AUDIO BLOCK DIAGRAM	3-11
3.10	SWITCHING POWER SUPPLY AND REGULATOR SCHEMATIC DIAGRAMS	3-12
3.11	SWITCHING POWER SUPPLY AND REGULATOR CIRCUIT BOARDS	3-13
3.12	MECHANISM CONTROL SCHEMATIC DIAGRAM	3-14
3.13	DECK TERMINAL, CASSETTE HOUSING, RELAY, END SENSOR AND REC SAFETY SCHEMATIC DIAGRAMS	3-15
3.14	DECK TERMINAL, CASSETTE HOUSING, RELAY, END SENSOR AND REC SAFETY CIRCUIT BOARDS	3-16
3.15	MECHANISM CONTROL AND AUDIO/CONTROL HEAD CIRCUIT BOARDS	3-17
3.16	SERVO AND SERVO SUB SCHEMATIC DIAGRAMS	3-18
3.17	SERVO AND SERVO SUB CIRCUIT BOARDS	3-19
3.18	VIDEO SCHEMATIC DIAGRAM	3-20
3.19	VIDEO CIRCUIT BOARD	3-22
3.20	JACK SCHEMATIC DIAGRAM AND CIRCUIT BOARD	3-23
3.21	FLYING ERASE SCHEMATIC DIAGRAM AND CIRCUIT BOARD	3-23
3.22	PRE/REC AMP SCHEMATIC DIAGRAM	3-24
3.23	PRE/REC AMP CIRCUIT BOARD	3-25
3.24	AV IN/OUT SCHEMATIC DIAGRAM	3-26
3.25	AV IN/OUT CIRCUIT BOARD	3-27
3.26	AUDIO SCHEMATIC DIAGRAM	3-28
3.27	AUDIO CIRCUIT BOARD	3-29
3.28	IF SCHEMATIC DIAGRAM	3-30
3.29	IF CIRCUIT BOARD	3-31
3.30	TUNER CONTROL SCHEMATIC DIAGRAM	3-32
3.31	TUNER CONTROL CIRCUIT BOARD	3-33
3.32	DEMODULATOR SCHEMATIC DIAGRAM	3-34
3.33	DEMODULATOR CIRCUIT BOARD	3-35
3.34	TIMER SCHEMATIC DIAGRAM	3-36
3.35	TIMER CIRCUIT BOARD	3-37
3.36	DISPLAY SCHEMATIC DIAGRAM	3-38
3.37	DISPLAY CIRCUIT BOARD	3-39
3.38	OPERATION AND STEP SCHEMATIC DIAGRAMS	3-40
3.39	OPERATION AND STEP CIRCUIT BOARDS	3-41
3.40	SWITCH SCHEMATIC DIAGRAM	3-42
3.41	SWITCH CIRCUIT BOARD	3-43
3.42	TERMINAL SCHEMATIC DIAGRAM	3-44
3.43	TERMINAL CIRCUIT BOARD	3-45
3.44	AUTO TRACKING SCHEMATIC DIAGRAM	3-46
3.45	AUTO TRACKING CIRCUIT BOARD	3-47
3.46	REMOTE CONTROL SCHEMATIC DIAGRAM	3-48
3.47	RF CONVERTER SCHEMATIC DIAGRAM	3-49
	4. EXPLODED VIEWS FAND PARTS	
4.1	PACKING ASSEMBLY <M1>	4-1
4.2	CABINET ASSEMBLY <M2>	4-2
4.3	CHASSIS ASSEMBLY <M3>	4-3
4.4	MECHANISM ASSEMBLY <M4>	4-4
	MECHANISM ASSEMBLY <M4>	4-4

Section	Title	Page

5. ELECTRICAL PARTS LIST

SW POWER SUPPLY BOARD ASSEMBLY <01><02> ..... 5 - 1
MECHACON BOARD ASSEMBLY <04> ..... 5 - 3
VIDEO BOARD ASSEMBLY <05> ..... 5 - 4
TERMINAL BOARD ASSEMBLY <06> 5-11
IF BOARD ASSEMBLY <07> 5-12
TUNER CTL BOARD ASSEMBLY <08> 5-13
AUDIO BOARD ASSEMBLY <09> 5-14
AUDIO/VIDEO IN OUT BOARD ASSEMBLY <10> 5-17
AUDIO CONTROL HEAD BOARD <12> 5-19
DEMODULATOR BOARD ASSEMBLY <14> 5-19
TIMER BOARD ASSEMBLY <20> 5-20
OPERATION BOARD ASSEMBLY <22> 5-22
SW/JACK BOARD ASSEMBLY <26><36> 5-23
DISPLAY/STEP BOARD ASSEMBLY <27><37> 5-23
SERVO SUB BOARD ASSEMBLY <39> 5-24
PRE/REC BOARD ASSEMBLY <43> 5-25
FLYING ERASE BOARD ASSEMBLY <46> 5-27
SERVO BOARD ASSEMBLY <48> 5-28
DECK TERMINAL BOARD ASSEMBLY <51><53> 5-29
RELAY BOARD ASSEMBLY <52> 5-30
END SENSOR BOARD ASSEMBLY <54> 5-30
CASSETTE HOUSING BOARD <56> 5-30
UPPER DRUM BOARD <62> 5-30
AUTO TRACKING BOARD ASSEMBLY <83> 5-30

6. TECHNICAL INFORMATIONS

6 . 1 MECHANISM CONTROL CPU PIN FUNCTIONS ..... 6 - 1
6 . 1 . 1 IC1 pin function ..... 6 - 1
6 . 2 TIMER/DISPLAY CONTROL CIRCUIT ..... 6 - 2
6 . 2 . 1 Timer CPU pin functions (IC1) ..... 6 - 2

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

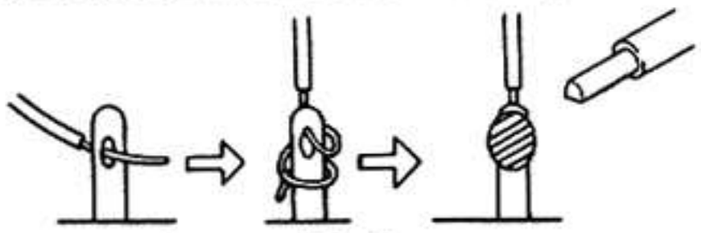


Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10—15 kg of force in any direction will not loosen it.

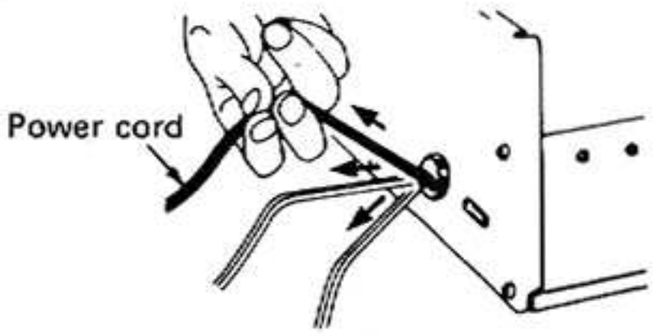


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

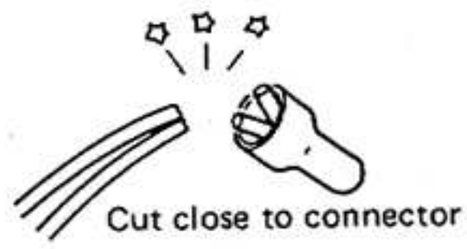


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

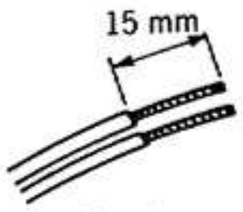


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

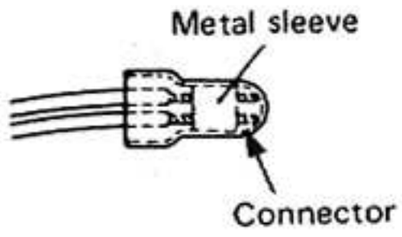


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

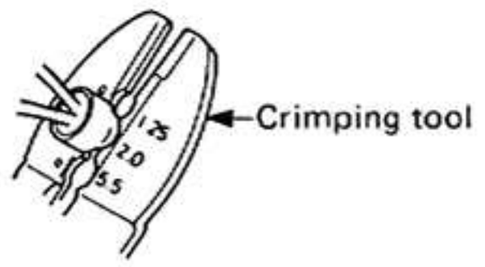


Fig. 6

(5) Check the four points noted in Fig. 7.

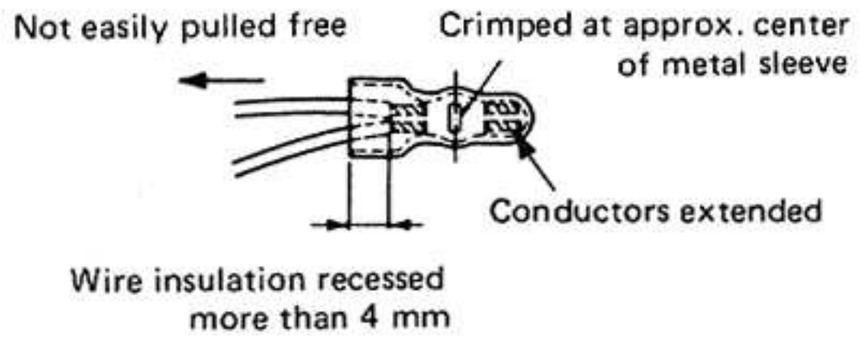

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

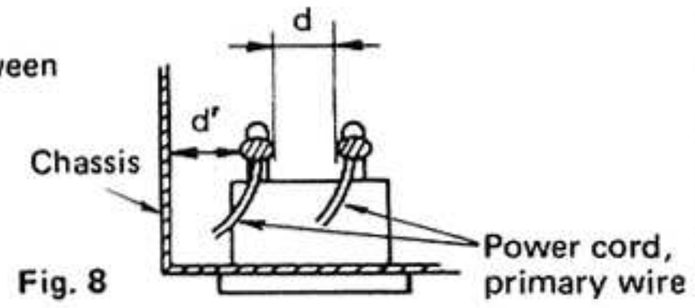


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

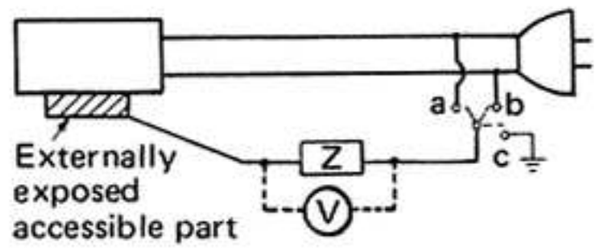


Fig. 9

5. Grounding (Class I model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

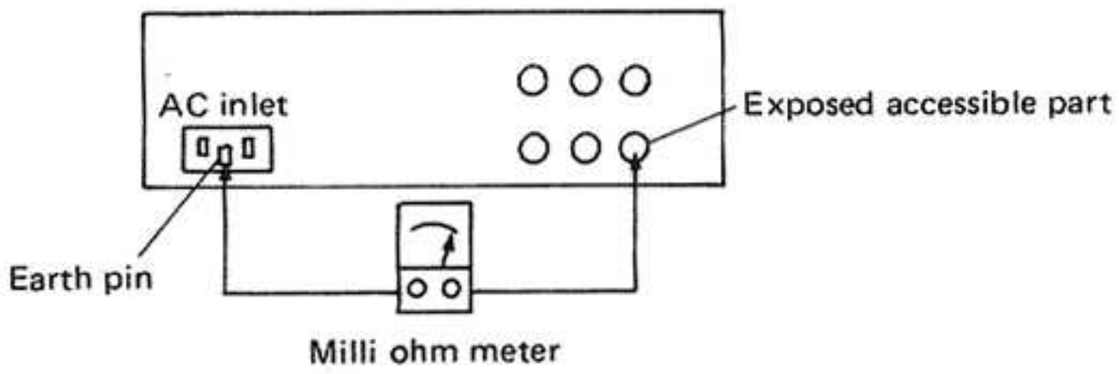


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	—	AC 900 V 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

JVC

VICTOR COMPANY OF JAPAN, LIMITED

Printed in Japan
8909 (Sanwa-NF)

SECTION 1
DISASSEMBLY AND MECHANISM ADJUSTMENTS

1.1 DISASSEMBLY

1.1.1 External covers (See Fig. 1-1-1)

1. Top cover
1) Take out four screws Ⓐ and one screw Ⓑ from the right, left and rear sides of the set.
2) Tilt up the rear end of the top cover in direction ① , then remove the top cover.

2. Front panel
1) Remove the top cover.
2) Carefully bend three hooks Ⓒ of the front panel assembly from the upper side of the chassis in order to disengage the hooks from the chassis.
3) Pull the front panel assembly toward direction ② to disengage three hooks Ⓓ of the front panel assembly from the bottom of the chassis, then remove the front panel assembly.

3. Bottom cover
1) Remove the top cover.
2) Take out four screws Ⓔ from the bottom of the set, then remove four feet.
3) Take out three screws Ⓕ from the bottom of the set, then remove the bottom cover.

4. Cassette housing assembly
1) Take out two screws Ⓖ from the video board assembly and take out two screws Ⓗ from the chassis.
2) Pull the cassette housing assembly toward front to disengage the two claws Ⓙ .
3) Carefully tilt up the cassette housing assembly in direction ③ and disconnect connector Ⓚ , then remove the cassette housing assembly.

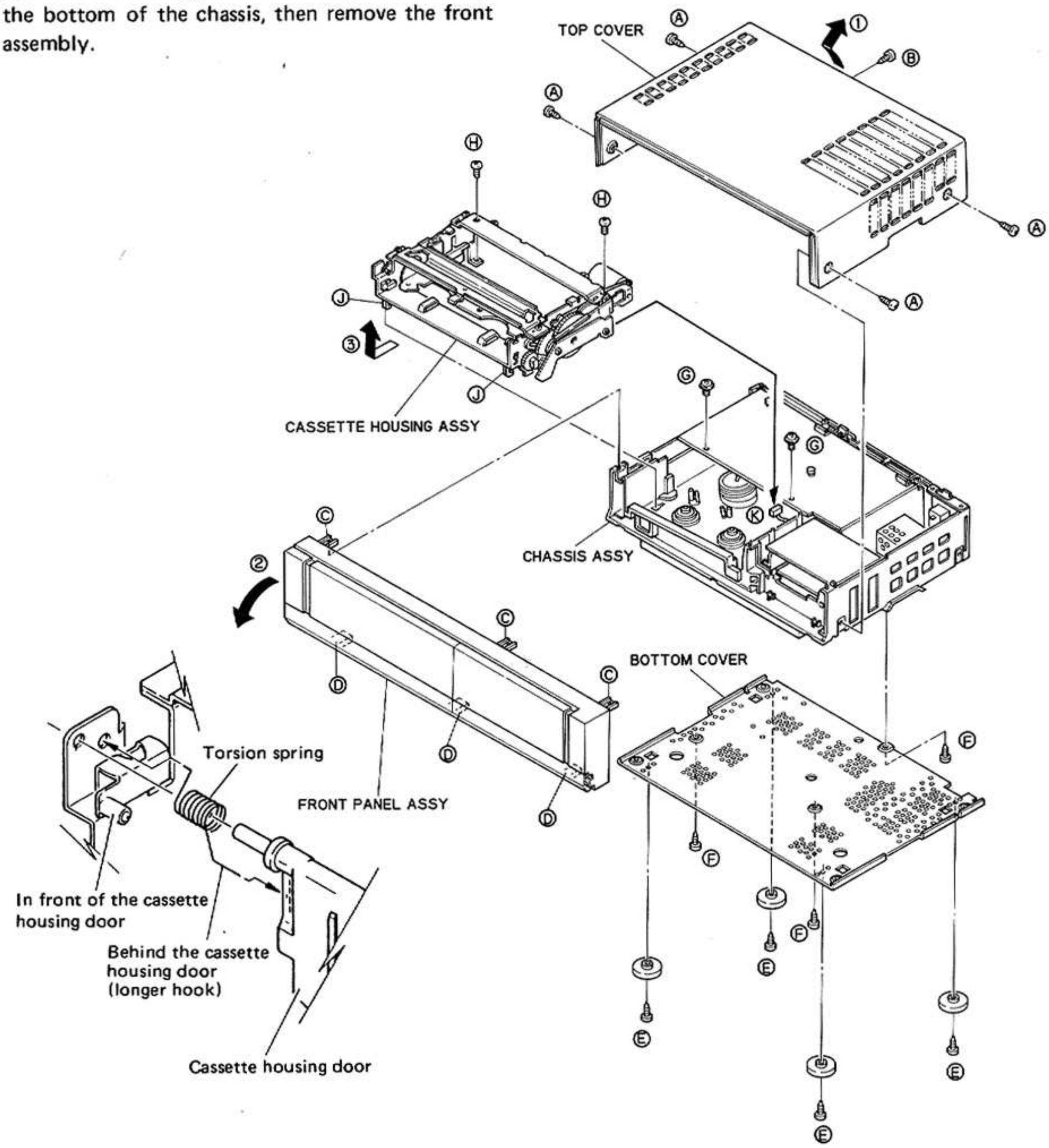


Fig. 1-1-1

1.1.2 Circuit boards (See Fig. 1-1-2)

1. Video and Terminal board assemblies.
1) Take out three screws Ⓛ and one screw Ⓜ , then raise the video and Terminal board assemblies to remove them.

2. Tuner CTL and IF board assemblies
1) Take out two screws Ⓝ and remove the Tuner CTL and IF board assemblies.

3. Flying Enase board assembly
1) Take out one screw Ⓟ and remove the bracket.
2) Raise the Flying Erase board assembly to remove it.

4. Mechacon, AV IN/OUT and Servo board assemblies.
1) Take out three screws Ⓠ , then remove the Mechacon, AV IN/OUT and Servo board assemblies.

Note: *Servo and AV IN/OUT board assemblies are connected to the Mechacon board assembly.*

5. Servo Sub board assembly
1) Take out one screw Ⓡ and remove the bracket.
2) Raise the Servo Sub board assembly chassis remove it.

6. Audio board assembly
1) Take out two screws Ⓢ and remove the Audio board assembly and shield plate assembly.

7. Timer board assembly
1) Take out two screws Ⓣ and remove the Timer board assembly.

8. Switching Power Supply and Regulator board assemblies.
1) Take out three screws Ⓤ and remove the Switching Power Supply and Regulator board assemblies.

9. Demodulator board assembly
1) Take out two screws Ⓥ and remove the Demodulator board assembly.

10. Auto Tracking board assembly
1) Pull the Auto Tracking board assembly toward front to remove it.

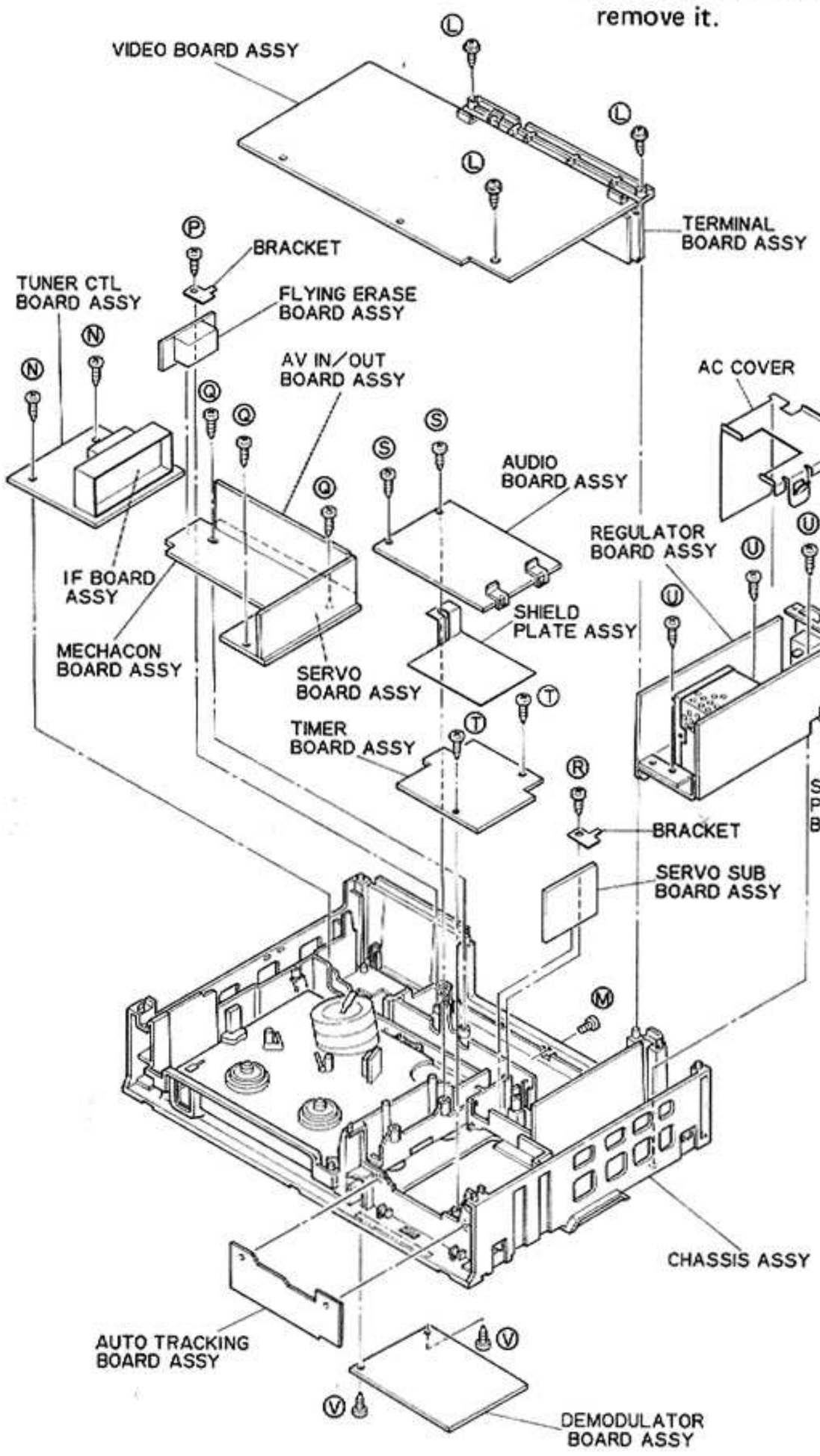


Fig. 1-1-2

1.1.3 Disconnecting the flat wire

In addition to the normally employed cap housing, in some applications, special types are used for such purposes as flat wire connection. This type is mainly used on the deck terminal board.
Among the special type housings are the PU58798 and PU59933 series. These clamp the ends of the cable wires.
See Fig. 1-1-3, -4 for methods of connecting and disconnecting the cables.

1. PU58798 series
   Pull the connector structure upward to release the clamp when removing or inserting the flat wire cable.

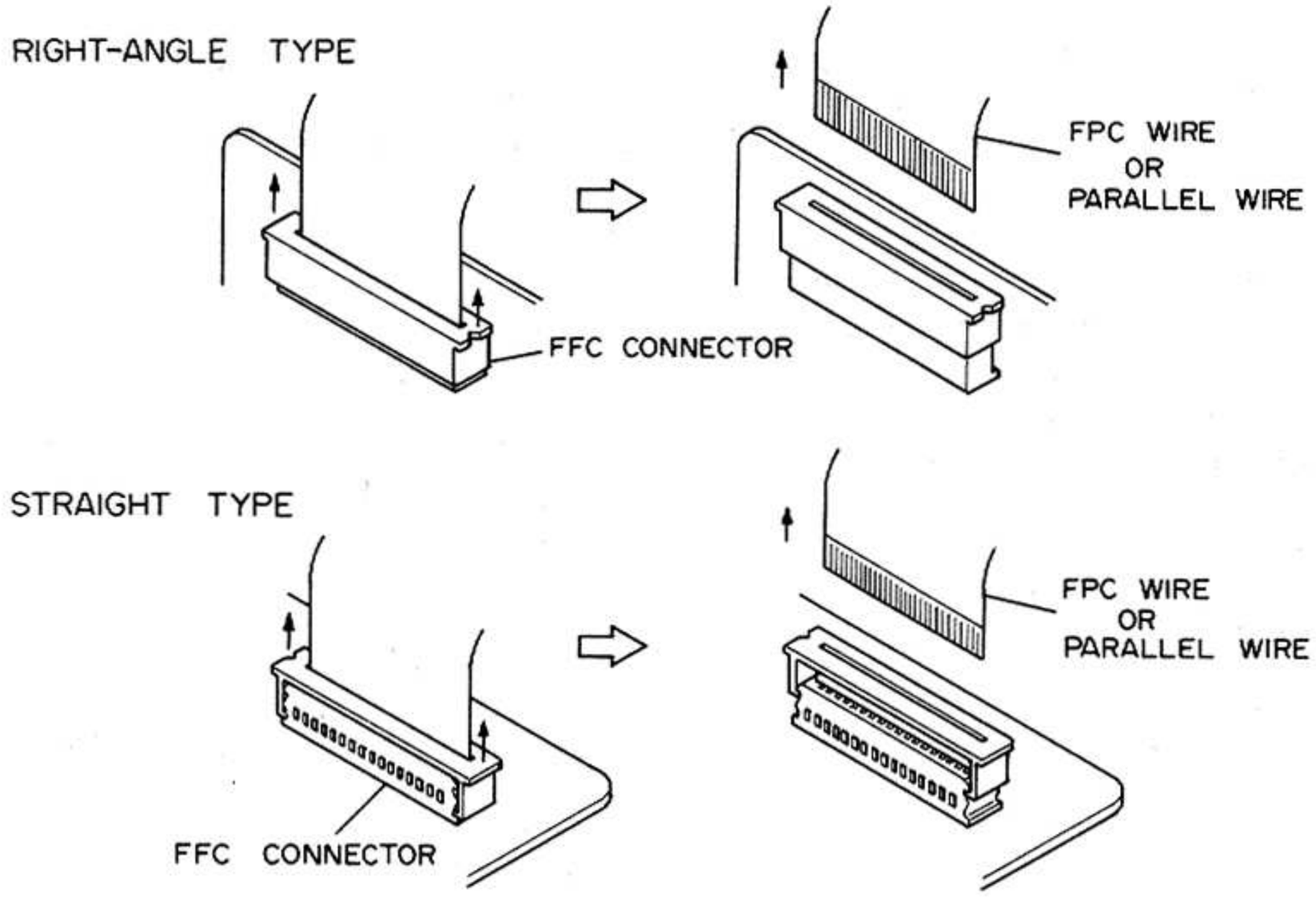


Fig. 1-1-3

2. PU59933 series
   With this type, release the clamp by pressing downward with the end of a flat blade screwdriver, as indicated below.

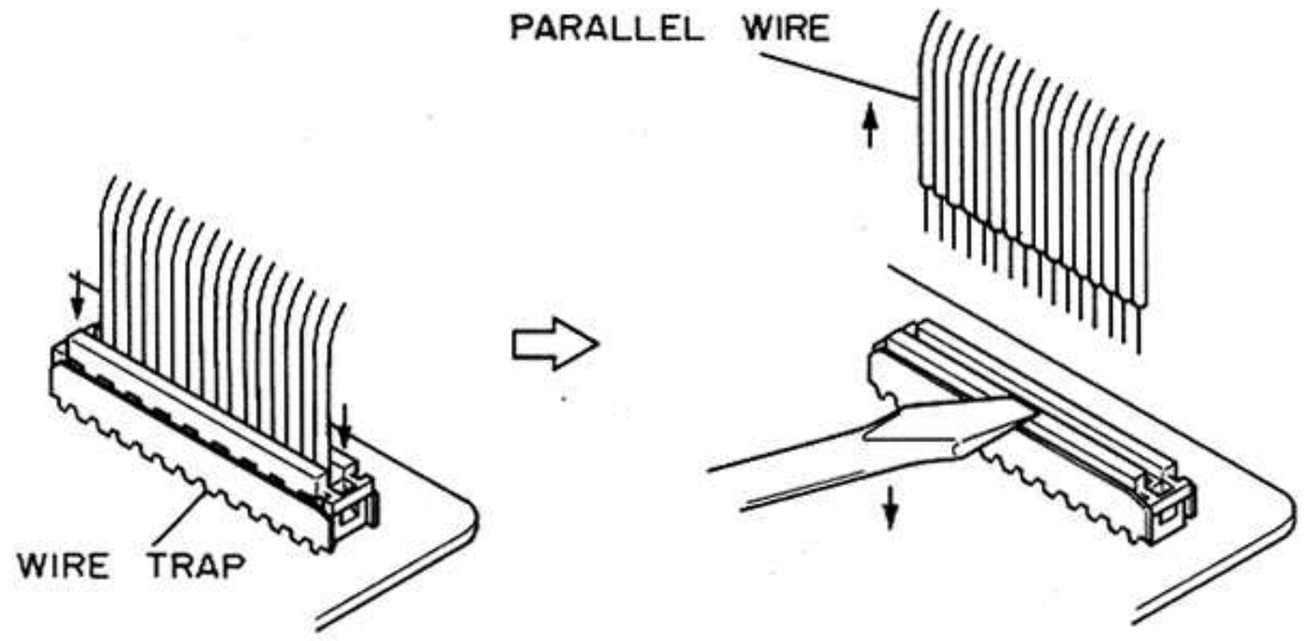


Fig. 1-1-4

Note: ***Wire removal method is the same for sets using the new lock type housing in the future. Either press or pull the housing to remove.***

1.2 MECHANISM ADJUSTMENT

1.2.1 Precautions

1. Disconnect mainframe from AC power before soldering.
2. Avoid imparting stress to wires when disengaging connectors.
3. Determine and correct the cause of difficulty before proceeding to adjustments. Do not disturb settings unnecessarily.
4. Use care not to damage tabs, claws, etc. during repairs.
5. Install the cassette housing assembly only when the mechanism is in the Eject or Stop mode position. In the Eject mode, the internal holder of the housing is fully raised. This is fully lowered in the Stop mode.

1.2.2 Check without cassette housing

Mechanism operations can be observed easily by removing the cassette housing assembly. Note the following.

1. Disable the photo transistor sensor (END SENSOR) on the main-deck by applying an opaque cover.
2. Connect pins 1 and 4 of MECHACON board connector CN2.
3. Connect VCR to AC power.
4. The loading arms move. The Stop mode is produced at loading end and power is cut off.
5. Again press the power button.
6. Select the desired modes with the operation buttons. However, notice that without tape, setting for the reverse direction modes produces the Stop mode after a few seconds due to absence of the reel sensor output.

1.2.3 Manually removing cassette tape

In event of electrical system failure that prevents the tape from being unloaded, the tape can be removed manually by the following procedure. Refer to Figs. 1-3-1, 1-3-2 and 1-3-3.

1. Disconnect VCR from AC outlet.
2. Turn the mode motor pulley (from the bottom of the deck) by hand toward the drum motor assy.
3. Turn the mode motor pulley so that the control cam rotates clockwise. This retracts the pole base assembly to the unloading position.
4. Turn the take-up reel disk (from the bottom of the deck) to absorb slack tape within the cassette.
5. Again turn the mode motor in the same direction to stop rotation of control cam.
6. Turn the cassette motor counterclockwise to raise the cassette and remove it.

1.2.4 Test equipment

The following special tools and fixtures are required for mechanism adjustment.

1. Alignment tapes : MH-2 and MH-2L
   Stairstep signal is employed for interchangeability checks and adjustments.
2. Torque gauge : PUJ48075-2
   Measures tape take-up torque.
3. Back tension cassette gauge : PUJ48076-2
   Measures tape tension at the supply side.
4. A/C head positioning tool : PUJ47351-2
   Shifts the head base for adjusting the control head position.

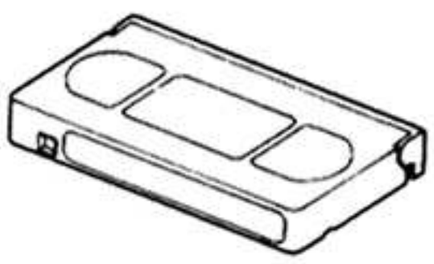
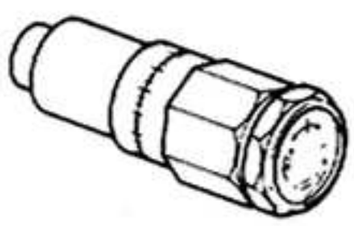
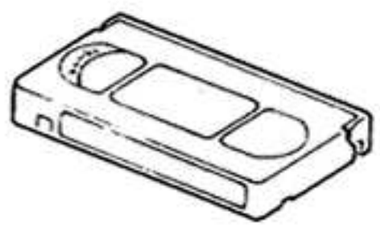
Alignment tapes 1	Torque gauge 2	Back tension cassette gauge 3	A/C head positioning tool 4
			

Fig. 1-2-1 Test equipment

1.3 MAIN MECHANISM PARTS

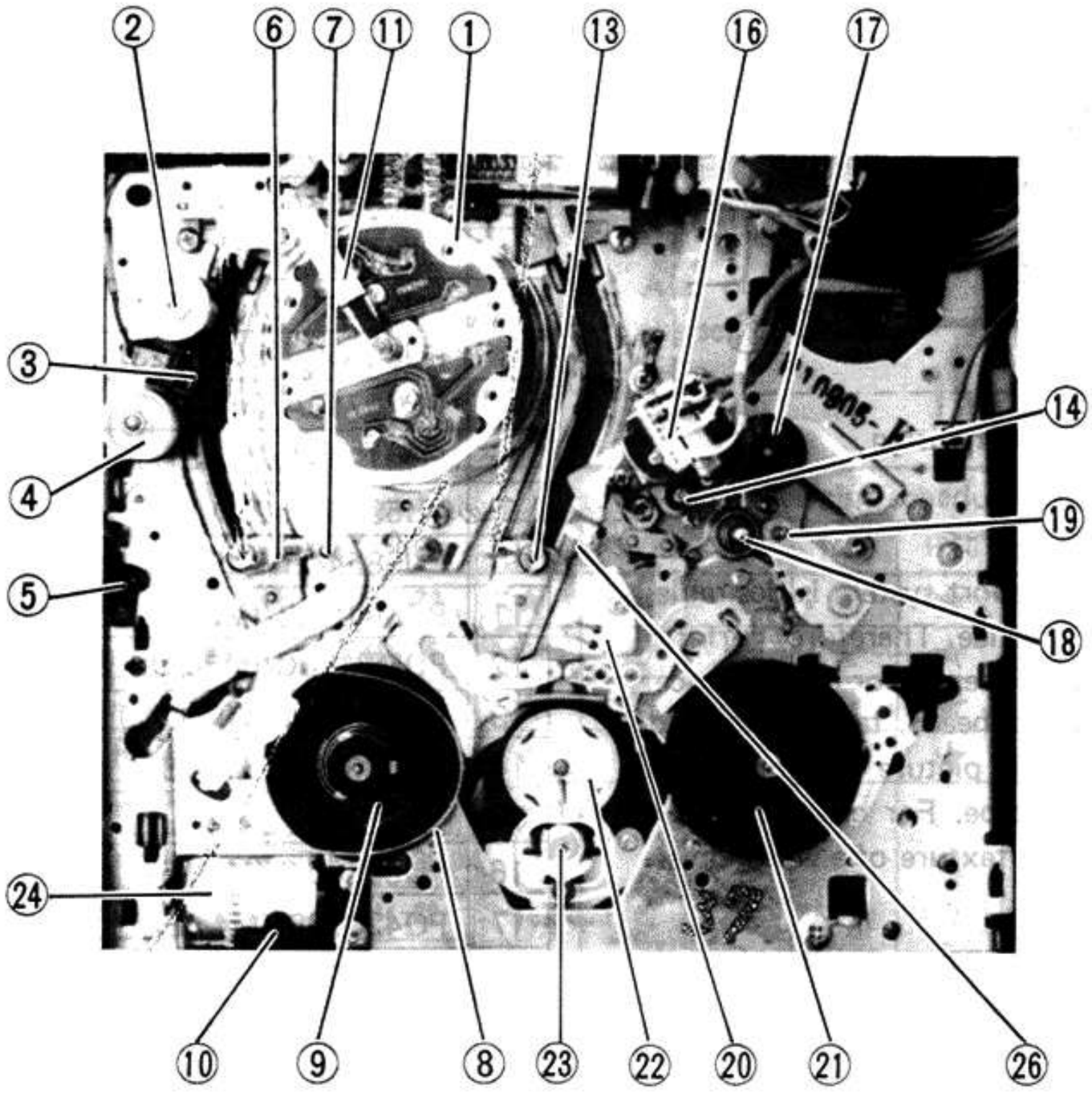


Fig. 1-3-1 Top view of main-deck

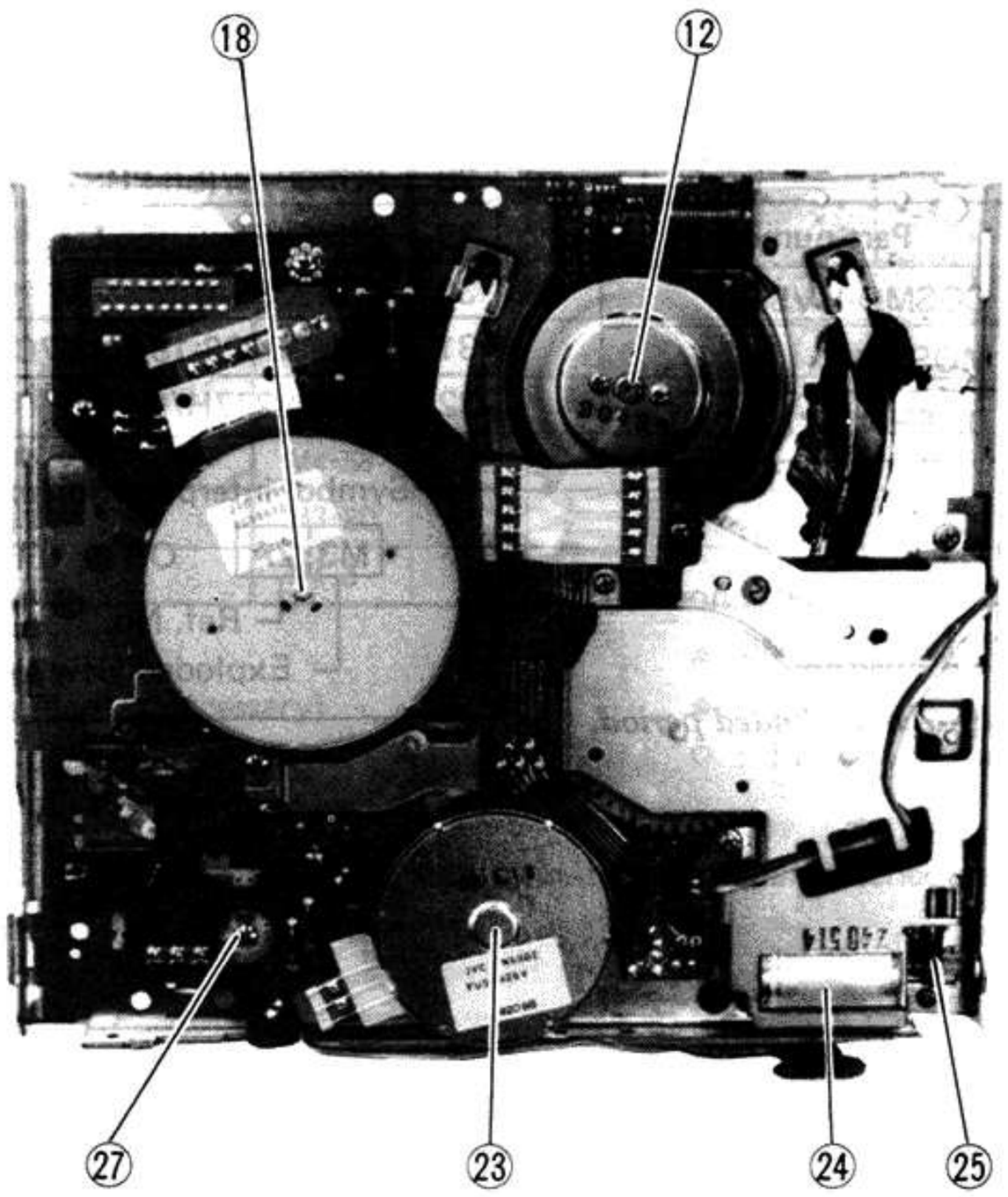


Fig. 1-3-2 Bottom view of main-deck

1.5 MAIN ASSEMBLY REPLACEMENT

No.	Item	Adjustment parts	Operating mode	Description
1	Upper drum assembly			Note: *When installing the new upper durm, use care not to touch the video heads. If heads are soiled, clean with a soft, finely woven cotton cloth or chamois that has been moistened in alcohol. Hold lightly against the heads and turn the drum clockwise. By no means clean with a vertical stroke.*
	– Removal –			1) Refer to Fig. 1-5-1. Take out screw (1) and remove the brush assembly. 2) Use a desoldering tool or desoldering braid to unsolder the upper drum boards. 3) Take out two screws (2) and raise the upper drum to remove it together with the upper drum board. (If this drum is to be reinstalled, use care not to touch or damage the heads.)
	– Installation –			1) Refer to Fig. 1-5-1. Align the black relay pin of the new upper drum with the white marking of the lower drum. 2) Reinsert screws (2) and tighten them in a balanced manner. 3) Reinstall and solder the upper drum boards. 4) Clean the drum assemblies (see above note). 5) Reinstall the brush assembly and secure with screw (1).
	– Checks and adjustments –			After installing the upper drum, perform the following checks and adjustments (refer to appropriate Sections of this Manual). 1) FM waveform 2) Servo circuit 3) Video circuit 4) FM audio circuit

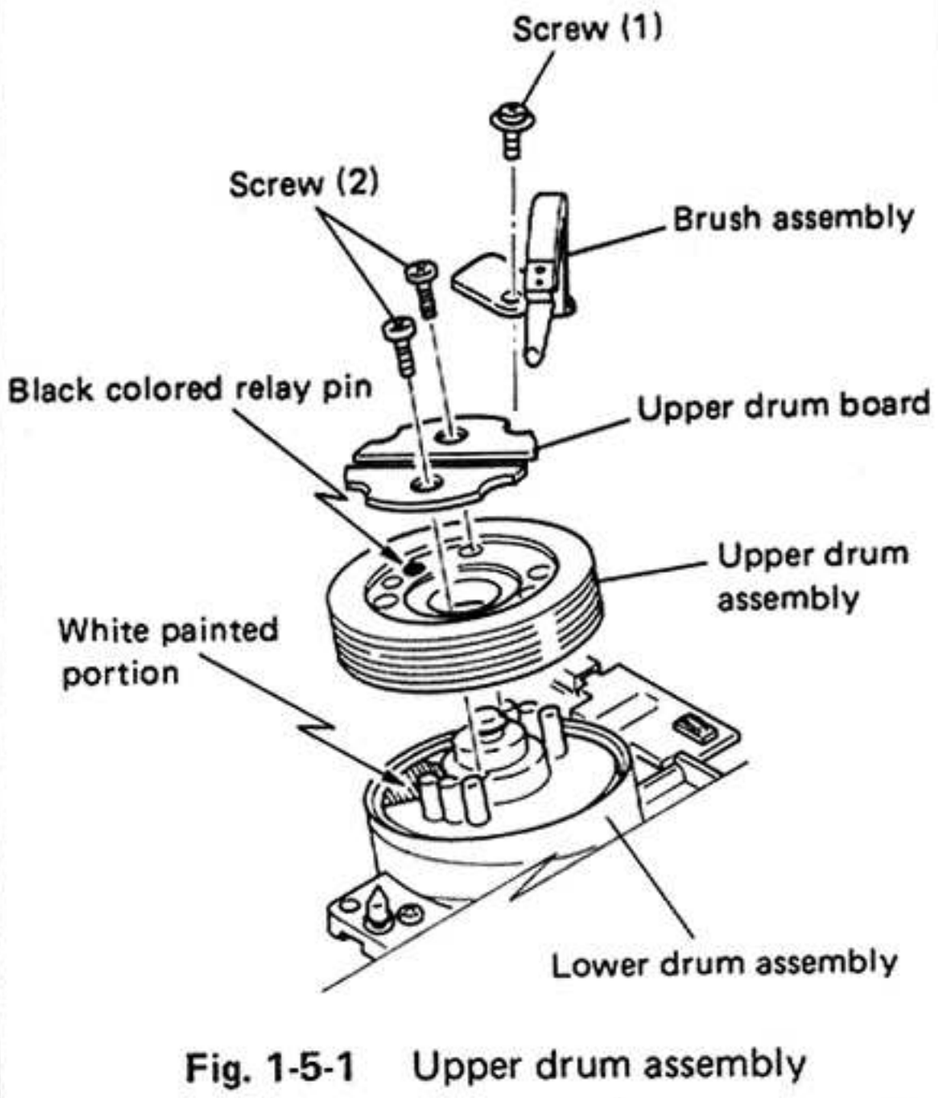
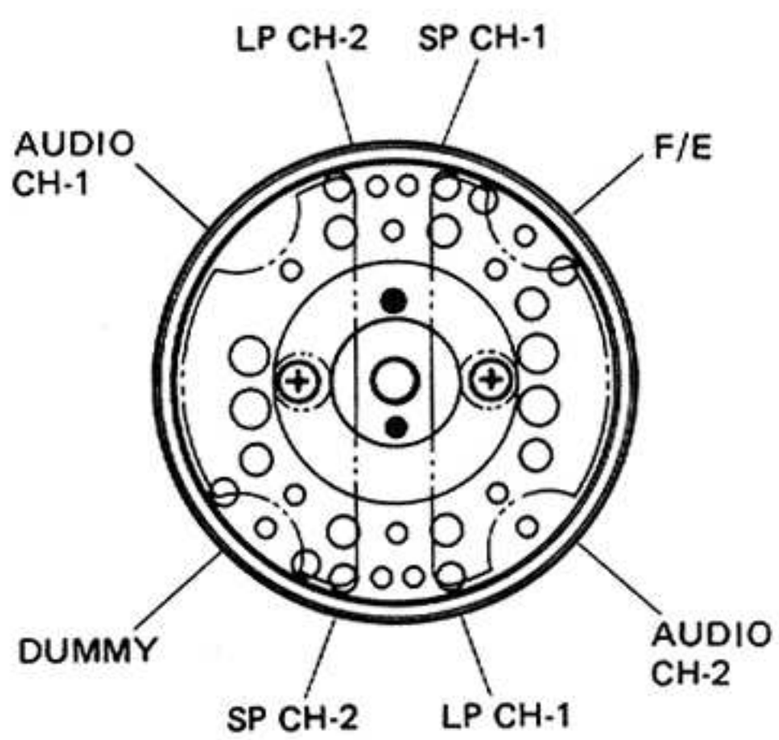


Fig. 1-5-1 Upper drum assembly



No.	Item	Adjustment parts	Operating mode	Description
2	A/C head (Audio/Control head) – Removal –			1) Disengage connectors attached to the A/C head board. 2) Take out two screws (1) and remove the A/C head together with the head base. 3) Unsolder and remove the A/C head board from the A/C head. 4) Take out three screws (3) and remove the A/C head from the head base. Use care regarding the three springs.

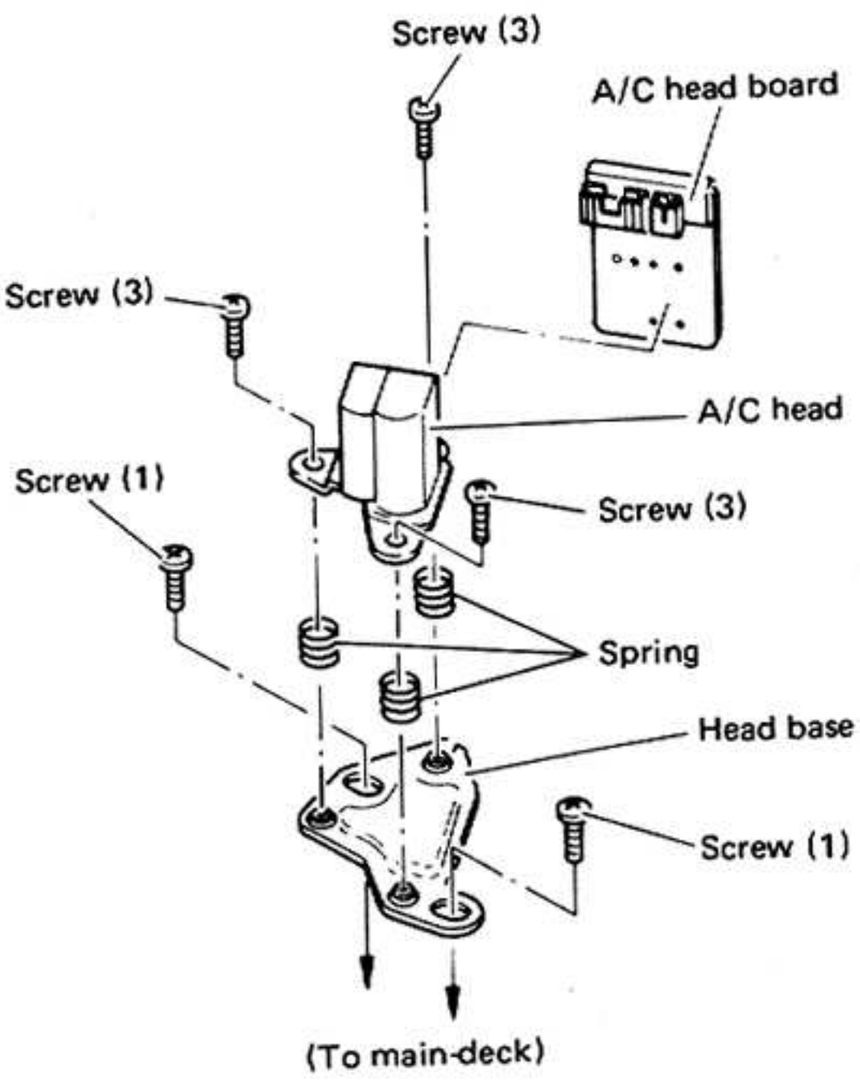


Fig. 1-5-2 A/C head

– Installation –	1) Install the A/C head by reversing the removal steps of above. 2) Temporarily set the A/C head height above the head base for 6.6 mm (see Fig. 1-5-3).

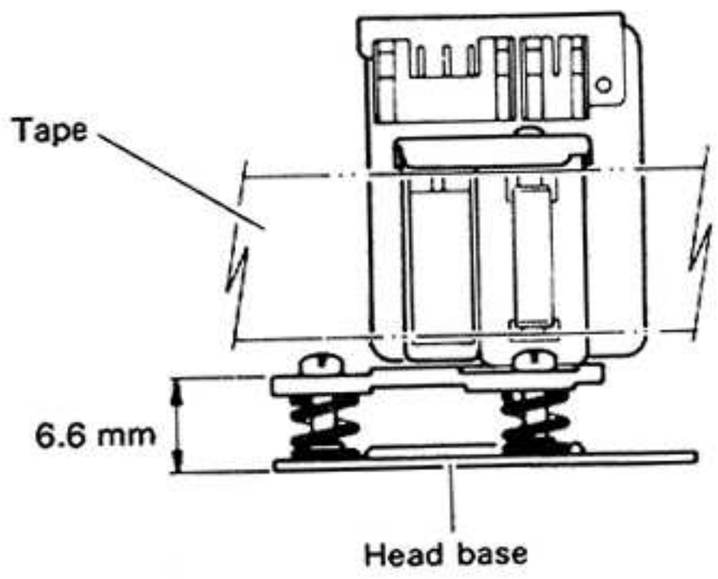


Fig. 1-5-3 A/C head height

– Checks and adjustments –	1) Use a spare tape (not Alignment tape) and confirm proper operation of the tape transport (see Section 1.8). 2) Perform interchangeability adjustment (see Section 1.9).

No.	Item	Adjustment parts	Operating mode	Description
3	Tension band assembly			1) Take out screw (1) and disengage the tension band assembly from the tension arm assembly (see Fig. 1-5-4). 2) Remove and replace the tension band assembly. 3) Perform tension pole position adjustment (see Section 1.7).

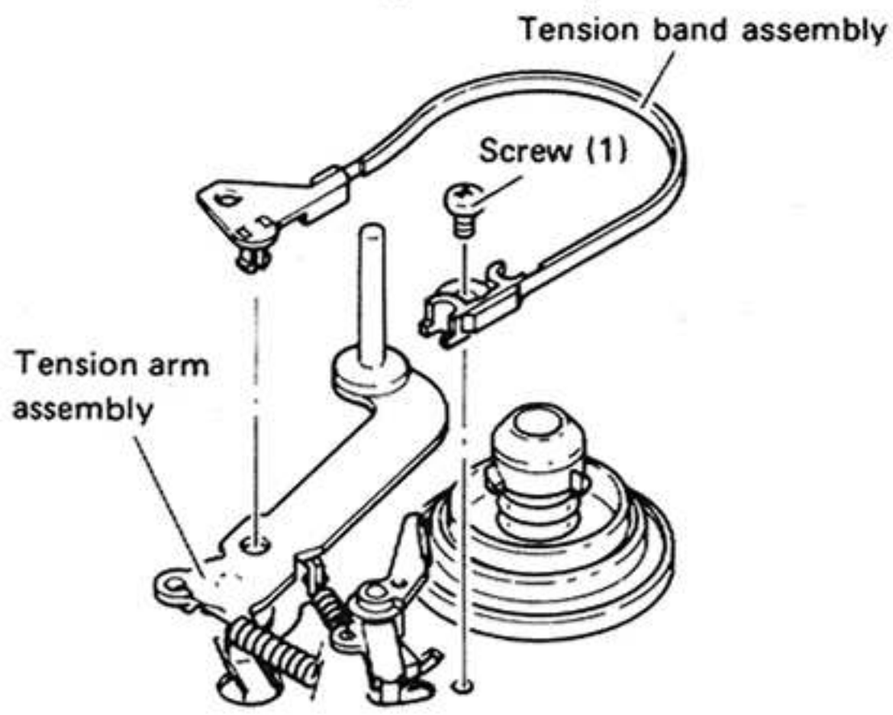


Fig. 1-5-4 Tension band assembly

1.6 ASSEMBLY PROCEDURE OF MECHANISM

No.	Item	Adjustment parts	Operating mode	Description
	A close relationship exists between the mode select switch and the mechacon circuit. Therefore, the mode select switch and control arm engagement determines the overall mechanical operations of the levers, gears, rollers, etc. If these parts are not properly positioned, the video deck becomes stalled in the unloading or Stop mode.			
1	Loading arm assemblies			These assemblies are comprised of loading gears, torsion springs and loading arms. 1) Refer to Fig. 1-6-1 and install the loading arm assemblies correctly.

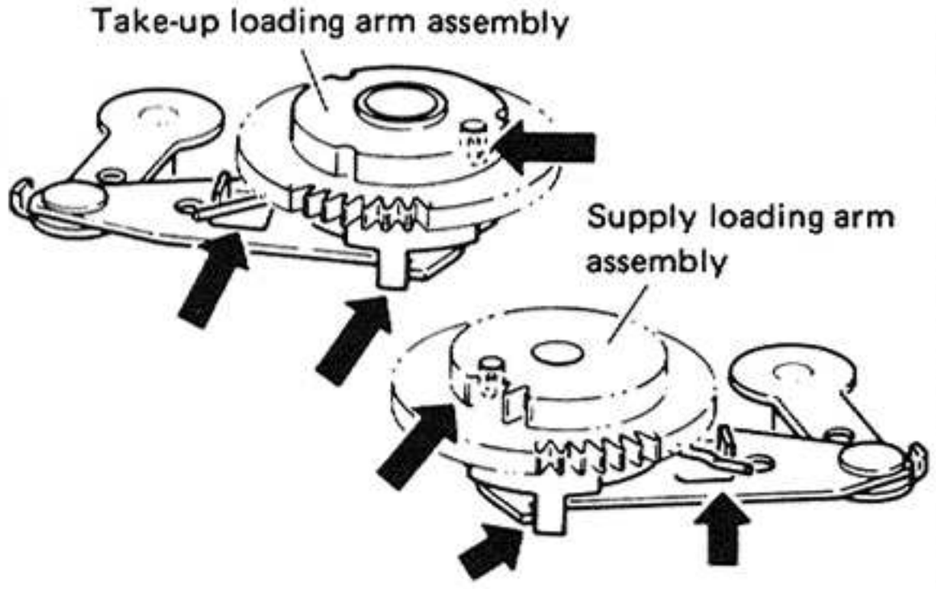


Fig. 1-6-1 Loading arm assembly (1)

2) The take-up and supply loading arm positions with respect to the loading gear holes are indicated in Fig. 1-6-2. This configuration is important to allow shifting to the next operation.

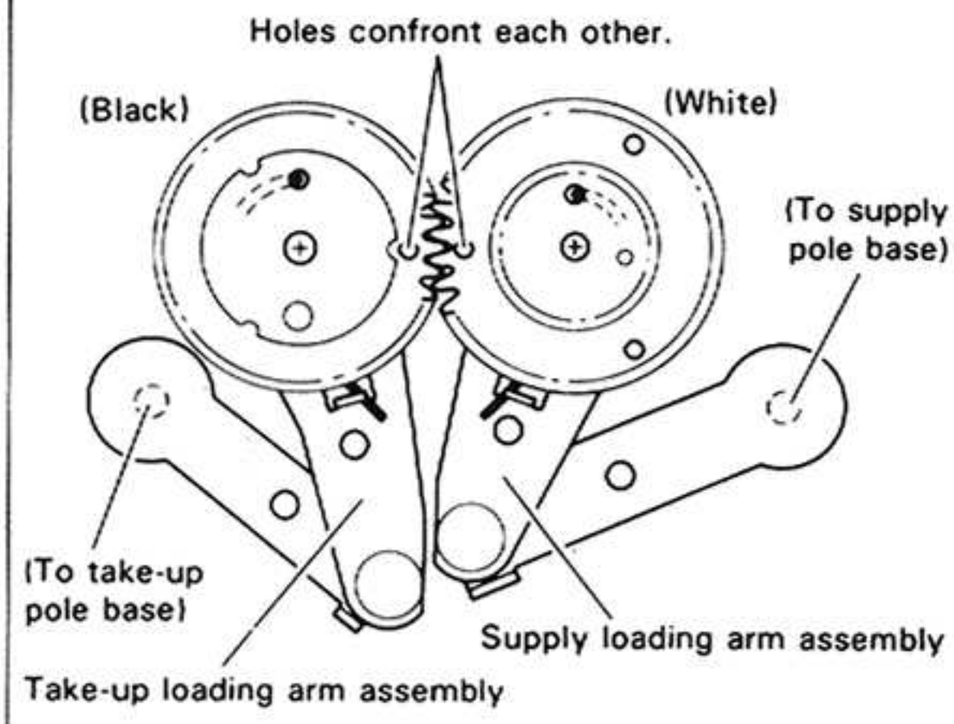


Fig. 1-6-2 Loading arm assembly (2)

No.	Item	Adjustment parts	Operating mode	Description
2	Control cam			1) Install the half loading cam on the cam bracket assembly, then mount the slide cam plate assembly so that its stud sets into the groove on the half loading cam. 2) Install the arm gear assembly on the cam bracket assembly. 3) Assemble the second gear and the control cam so that the stud of the control cam sets into the hole of the second gear. 4) Mount the above assembly (control cam and second gear) on the cam bracket assembly to satisfy the relation indicated in figure. 5) Do not turn the control cam from this position for the next step.

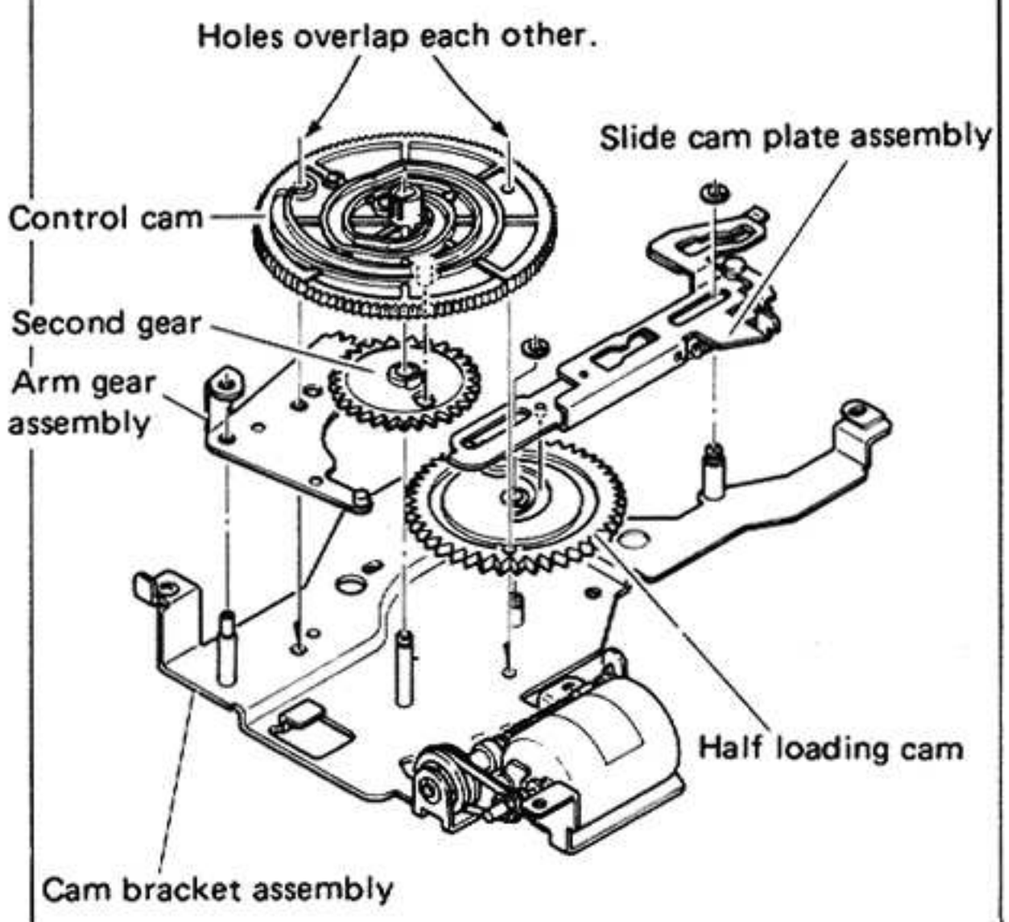


Fig. 1-6-3 Control cam

3	Cam bracket assembly		1) Refer to Fig. 1-6-4 and press the plate assembly toward the right to overlap the indicated hole with that of the main deck. 2) Then install the cam bracket assembly. **Note:** *If the arm and loading gears do not mesh properly, use a jeweler's screwdriver or similar tool to engage the gear teeth while installing the cam bracket assembly.*

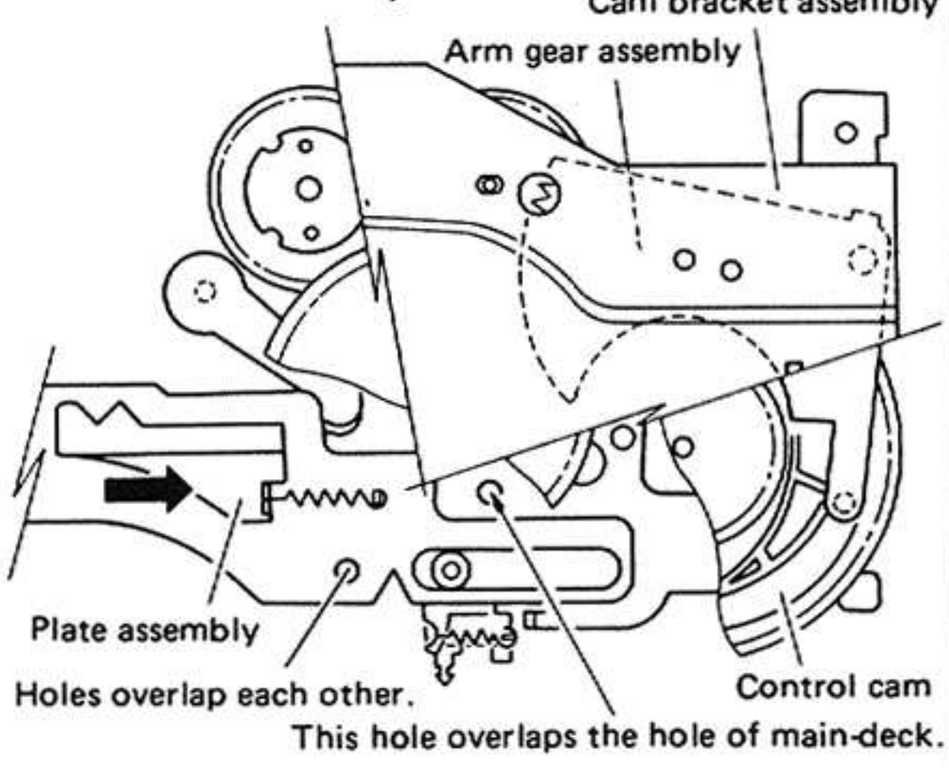


Fig. 1-6-4 Cam bracket assembly

4	Mode switch position		1) Engage the plate assembly and mode switch as shown in Fig. 1-6-5. Partially tighten screw (1) to where the switch can still be shifted for adjusting the position. 2) Press the plate assembly toward the right to where the holes are overlapped as in Fig. 1-6-4. Insert a jeweler's screwdriver into the holes to keep them aligned. 3) Shift the mode switch to align the V-notch as indicated in Fig. 1-6-5. Then tighten screw (1) to secure. 4) Remove the jeweler's screwdriver, then reinstall and solder the circuit board.

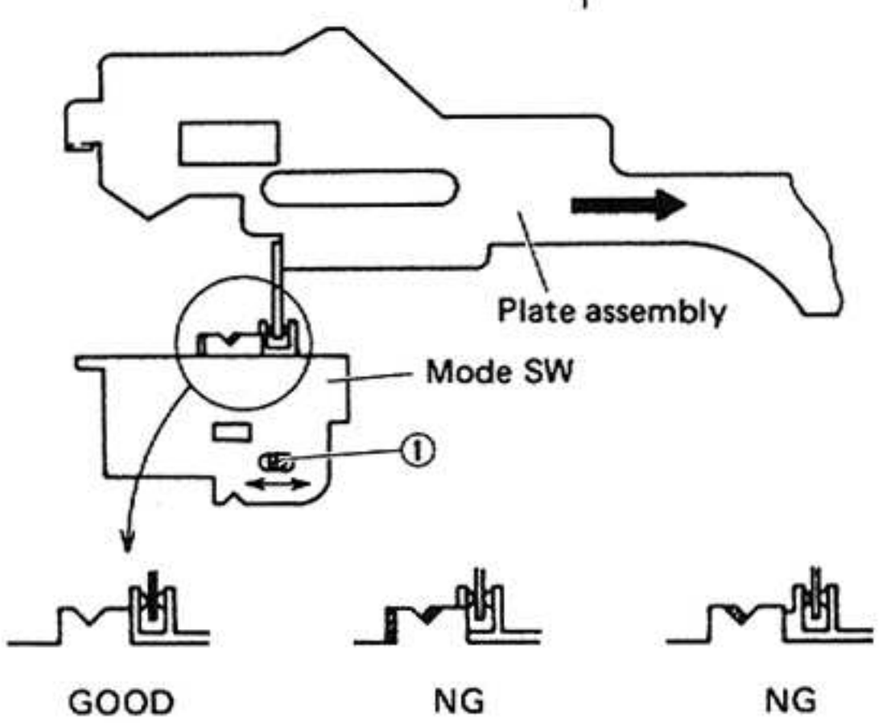


Fig. 1-6-5 Mode switch

1.7 CONFIRMATION AND ADJUSTMENT

No.	Item	Adjustment parts	Operating mode	Description
1	Tension pole position			1) Without a cassette tape, set for the Play mode (see Section 1.2). 2) Refer to Fig. 1-7-1. Slightly loosen screw (1). Adjust the tension band holder position for 0 mm separation between A and B. 3) Tighten screw (1) to secure the tension band holder. 4) Use the back tension cassette gauge and set for the Play mode. 5) Check for a scale reading between 25 and 45. 6) If outside this range, clean the tension band contacting portions of the supply reel disk with alcohol, or check the condition of the tension arm spring. If necessary, replace the tension band assembly.
2	Take-up torque			1) Without a cassette tape, set for the Play mode (see Section 1.2). 2) Set the torque gauge on the take-up reel disk. 3) Grasp the torque gauge lightly so that it rotates and read the value when the scale matches the indicator needle. Confirm a value between 45 and 155. 4) If outside this range, clean the rubber portion of the idler arm with alcohol, or if necessary, check the reel motor drive circuit.

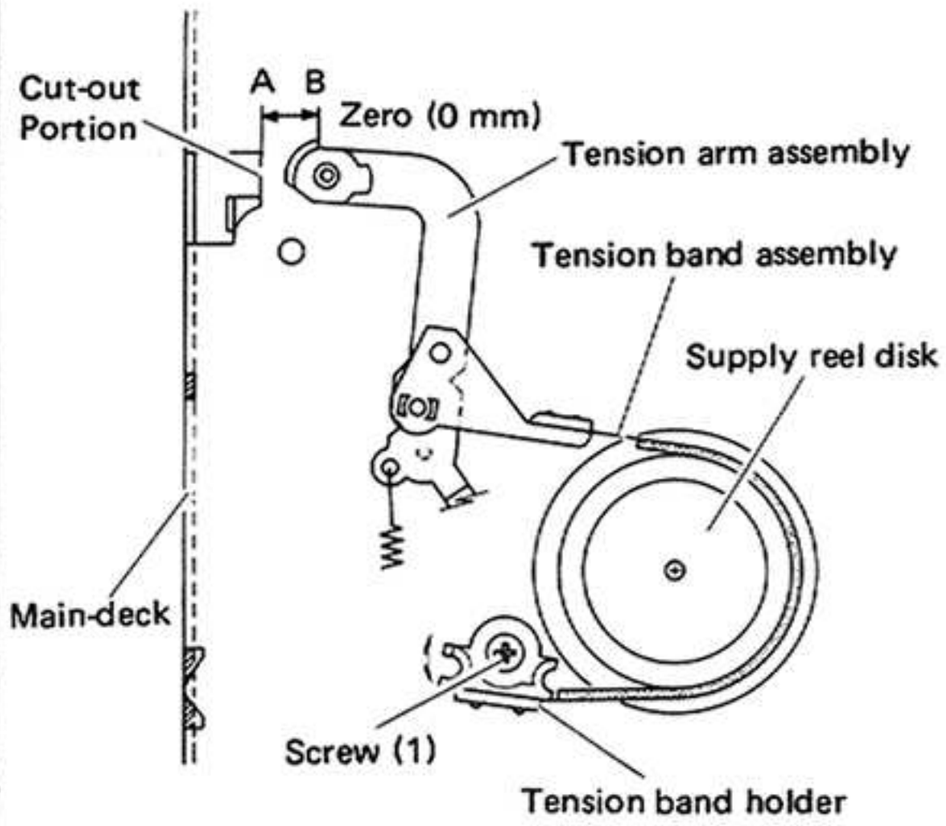


Fig. 1-7-1 Tension pole position

1.8 TAPE TRANSPORT CHECKS AND ADJUSTMENT PREPARATIONS

No.	Item	Adjustment parts	Operating mode	Description
	The tape transport system has been precision-adjusted at the factory and ordinarily does not require readjustment. However, adjustment may become necessary after long term usage or after replacing parts that affect the tape transport. The following steps mainly cover preparations for the interchangeability adjustments of Section 1.9.			
1	Guide roller			1) During interchangeability adjustments, the guide roller is turned with a flat-blade screwdriver to adjust its height and correct FM waveform linearity. Use a metric hex key (1.25 mm) to slightly loosen the setscrew at the base of the guide roller (see Fig. 1-8-1). Loosen the setscrew just sufficiently to allow the guide roller to be turned. If too loose, tape transport will be too unstable to permit correct adjustment.
2	Impedance roller			1) This compensates for tape running stability between the cassette and head drum. After adjusting the supply guide roller, the impedance roller height is adjusted for smooth tape transport at the lower flange. 2) Use a metric nutdriver (5.5 mm) to adjust by turning the upper nut (see Fig. 1-8-2). However, note that excess turning can disturb the FM waveform stability.
3	A/C head (audio/control head)			1) After adjusting the take-up guide roller, adjust the A/C head inclination for smooth tape travel at the lower flange of the take-up guide pole. Refer to Fig. 1-8-3.

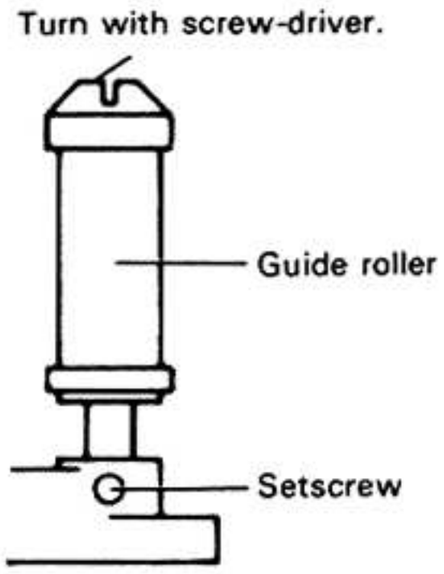


Fig. 1-8-1 Guide roller

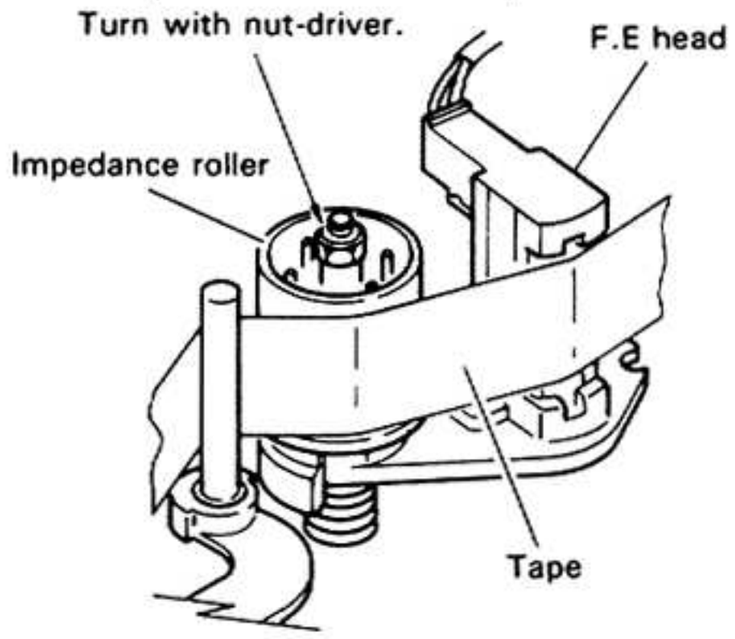


Fig. 1-8-2 Impedance roller

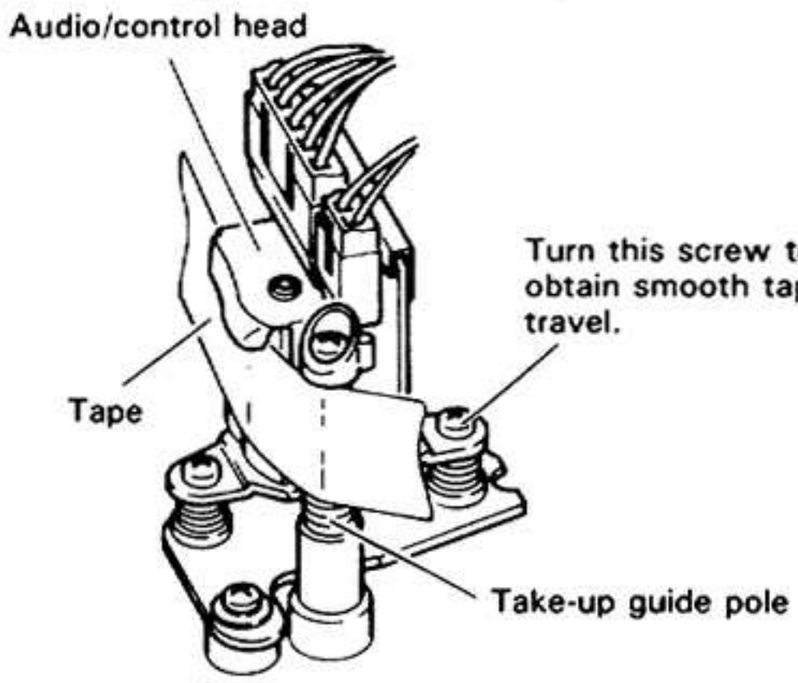


Fig. 1-8-3 A/C head

1.9 INTERCHANGEABILITY CHECKS AND ADJUSTMENTS

No.	Item	Adjustment parts	Operating mode	Description
	Before using costly Alignment tape, use a spare tape and confirm correct operation of the tape transport. If this adjustment is perform, after turning off the indicator by pressing the + and – tracking buttons simultaneously, perform interchangeability adjustment.			
1	FM waveform $\frac{b}{a} \geqq 0.7$, $\frac{c}{a} \geqq 0.5$ and $\frac{d}{a} \geqq 0.5$			1) Connect oscilloscope to the FM OUT testpoint of the video playback circuit. Trigger the oscilloscope externally with the signal from the drum flipflop (D-FF or FF) testpoint. Set the trigger slope to minus (–). 2) Play the MH-2 Alignment tape and adjust the tracking for maximum FM waveform output. Refer to Fig. 1-9-1. Confirm the relationships indicated in the figure for maximum output (a), minimum center output (b), minimum output at the drum intake (c) and minimum output at the drum output (d). 3) Adjustment is required if the above specifications are not fulfilled. Even when these are fulfilled, check that the FM waveform varies linearly overall. If not, slight deviation in tracking will cause a large proportional level drop to result in noise appearing in the picture. Therefore, in this condition, proceed to the following checks and perform adjustments where necessary. 4) Operate the tracking adjustment between minimum and maximum outputs of the FM waveform. Observe the portion of the waveform corresponding to the drum intake (see Fig. 1-9-2). As the tracking is adjusted, although the gain may increase or decrease, the geometric shape of this part of the waveform should remain consistent. If the shape varies, as shown by the incorrect examples in the figure, carefully perform adjustment of the supply guide roller height. 5) Next observe the portion of the waveform corresponding to the drum output (see Fig. 1-9-3), while operating the tracking adjustment. This should also vary only in gain, but not in shape. If the shape varies, as shown by the incorrect examples in the figure, carefully perform adjustment of the take-up guide roller height. 6) Check the overall FM waveform. Fine-adjust both guide rollers so that variation is as minimum and linear as possible. 7) Observe the tape travel at the guide rollers and guide poles. Confirm absence of tape creasing or curling. Confirm that the tape properly rides at the lower flange of the supply guide pole. Carefully adjust the guide pole height if necessary. This adjustment is important and affects FM waveform response. If creasing or curling is observed at the take-up guide pole, carefully adjust the audio/control head inclination so that the tape rides properly at the lower flange of the guide pole. Finally, again check the FM waveform.

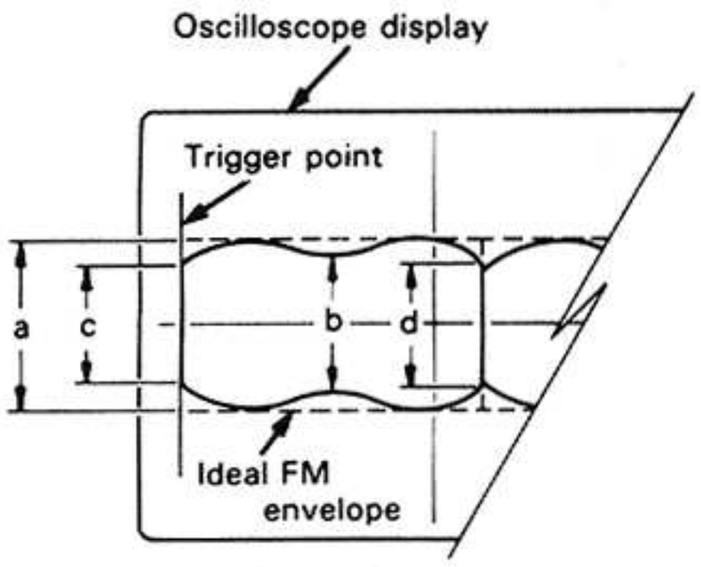


Fig. 1-9-1 FM envelope

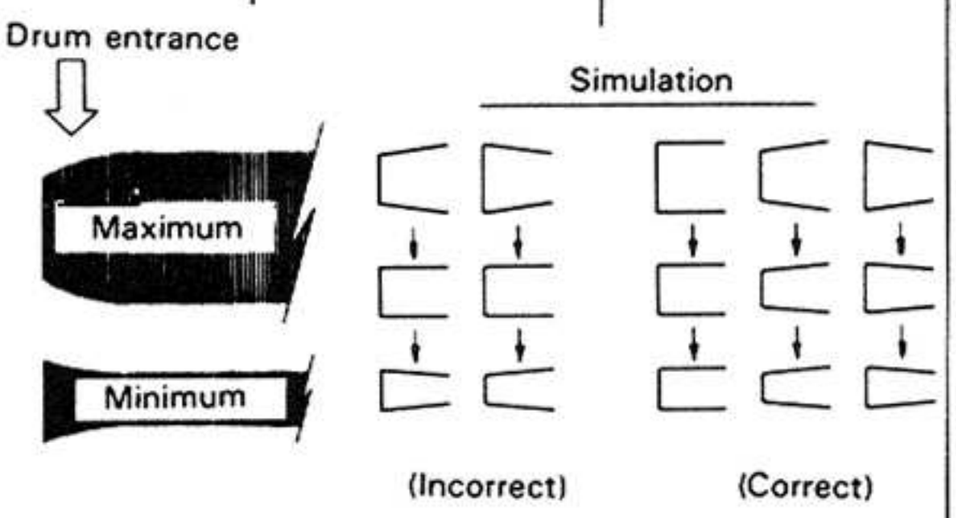


Fig. 1-9-2 Drum entrance

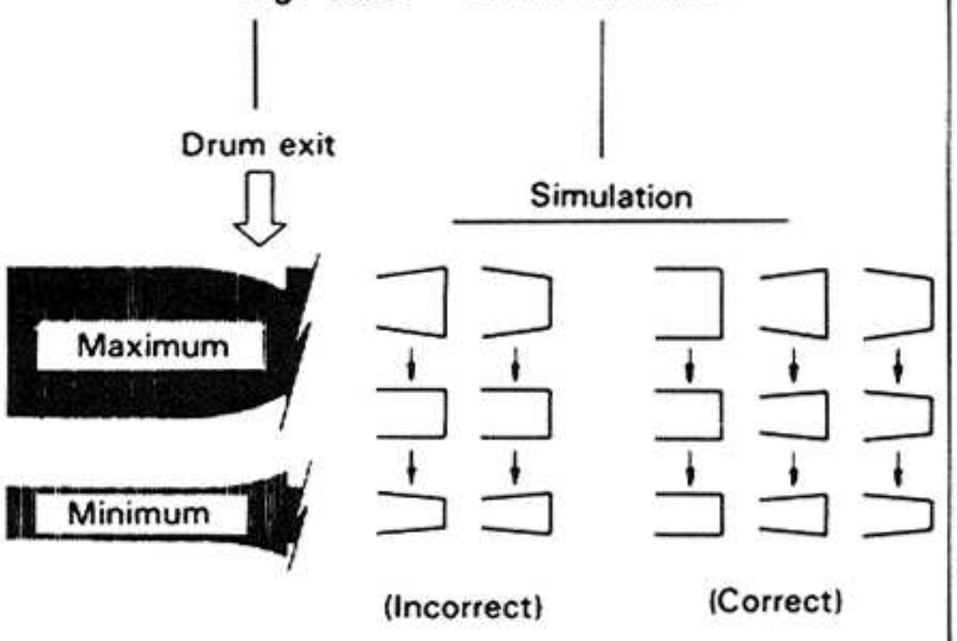


Fig. 1-9-3 Drum exit

No.	Item	Adjustment parts	Operating mode	Description
	Proper adjustment of the A/C head position is important for ensuring adequate audio output and S/N. Severe misalignment can prevent control signal pick-up and cause servo instability. Precise adjustment is particularly important for models that include tape indexing and addressing features, since these rely on control signal coding for operation. To observe the audio signal, connect an oscilloscope to the test point (AUDIO OUT) of the audio circuit, or directly to the audio output terminal. In some cases, monitoring the sound with headphones may be helpful.			
2	A/C head adjustments			1) Play the stairstep (audio 6 kHz) portion of the MH-2 Alignment tape. 2) Adjust screw (3) (Fig. 1-9-4), which is the azimuth adjustment, for maximum output. 3) Turn screws (1), (2) and (3) by small and equal increments (about 45° at a time) to adjust the A/C head height for maximum audio output. Slightly raise and lower the height to confirm the maximum output position. 4) Observe the FM waveform and tighten the guide roller setscrews. Use care not to disturb the height adjustments. Then again confirm the FM waveform.
	This determines the distance between the sound and picture information on the tape. Correct adjustment is important for providing synchronization of picture and sound in the program. Incorrect adjustment is particularly noticeable in the slow speed (LP) mode. Observe the FM waveform by connecting an oscilloscope to the video play-back circuit test point (FM OUT). Trigger the oscilloscope externally with the drum flipflop signal. Use plus (—) trigger to view the CH1 waveform. Set the tracking adjustment to the neutral (AUTO) position. (Turn off the indicator by pressing the + and — tracking buttons simultaneously)			
3	Control head phase (X value)			1) Play the stairstep portion of the MH-2 Alignment tape. 2) See Fig. 1-9-5. Slightly loosen screws (4) and (5). Set the A/C head positioning tool over screw (4) with the pin of the tool inserted into the indicated hole. 3) Turn the tool counterclockwise to shift the A/C head fully toward the capstan direction. 4) While observing the CH-1 FM waveform, gradually turn the tool clockwise. Stop at the peak output position and tighten screw (5). Remove the tool and tighten screw (4). 5) Replace alignment tape MH-2L with MH-2, play back the stairstep segment of the alignment tape MH-2L. 6) Operate the tracking adjustment and confirm that the maximum FM waveform is obtained at the neutral setting. 7) If the FM output peak is not obtained at tracking neutral position, shift the A/C head at the FM output peak nearest to this position.

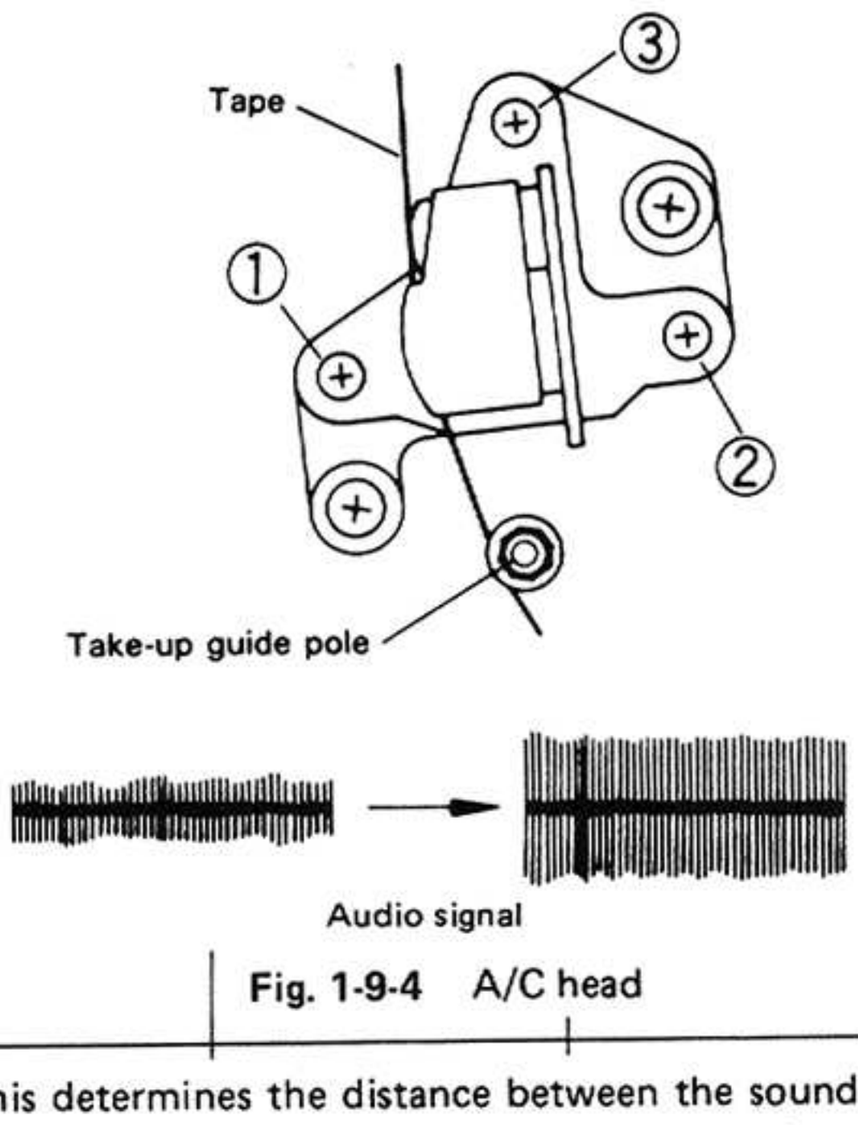


Fig. 1-9-4 A/C head

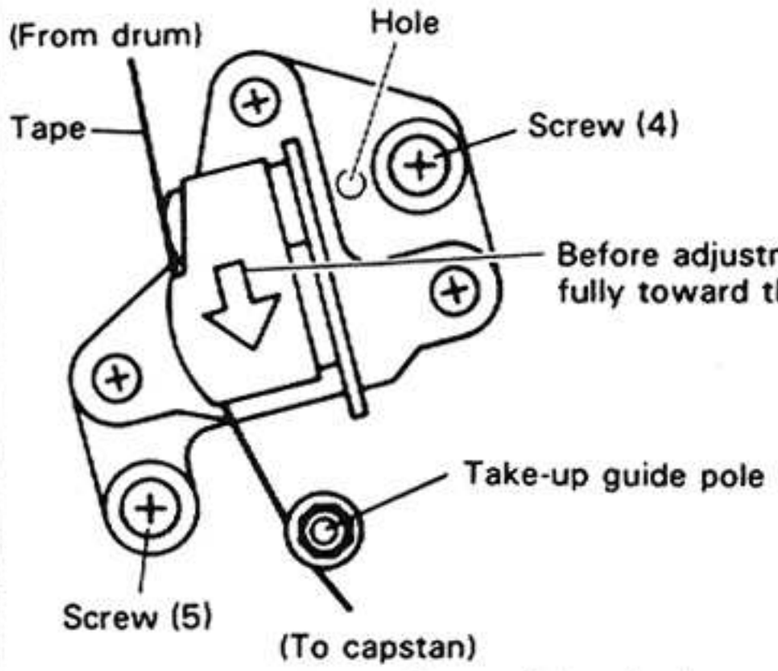


Fig. 1-9-5 Control head phase

No.	Item	Adjustment parts	Operating mode	Description
4	Final checks			1) Supply a video or TV signal (monochrome is preferable). Use a spare tape and record and play back. Confirm that the play-back FM signal conforms to the parameters indicated in Fig. 1-9-1. Check for both SP and LP modes. 2) Connect the oscilloscope to the test point (FM OUT) of the FM audio play-back circuit. Play the stairstep portion (which includes the FM audio carrier) of the MH-2L Alignment tape. Confirm absence of severe drop in FM waveform level. 3) Perform the checks and, if necessary adjustments, of the Electrical Adjustments Section for the servo, video and audio (and FM audio) circuits.

SECTION 2
ELECTRICAL ADJUSTMENTS

2.1 PREPARATION

Electrical adjustments are required after replacing circuit components and certain mechanical parts.
It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

2.1.1 Required test equipment

1. Color television or monitor
2. Oscilloscope: wide-band, dual-trace, triggered delayed sweep
3. Frequency counter
4. Vectorscope
5. Audio oscillator
6. Audio voltmeter
7. Digital voltmeter
8. Signal generator: RF/IF sweep/marker
9. Signal generator: PAL color bar, stairstep, video sweeper
10. Signal generator: Audio multiplex TV signal generator
11. Recording tape
12. Alignment tape: MH-2, MH-2H
13. RCA-S adapter: PTU93001A
14. Patch cord: PTU94001
    (PRE/REC board to CONNECTOR board)
15. Extension cable: PTU93004A
    (AV IN/OUT board to MECHACON board
    SERVO board to MECHACON board)
16. Head resonance adjust coil : PTU94004A
17. Head resonance adjust fixture : PTU94006A

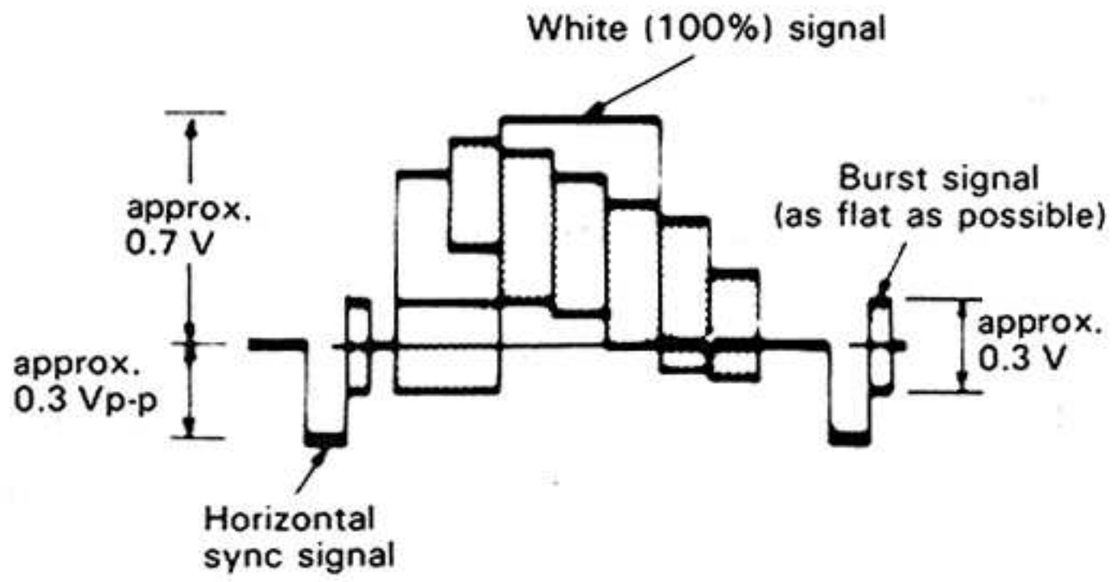


Fig. 2-1-1 Color bar signal of pattern generator

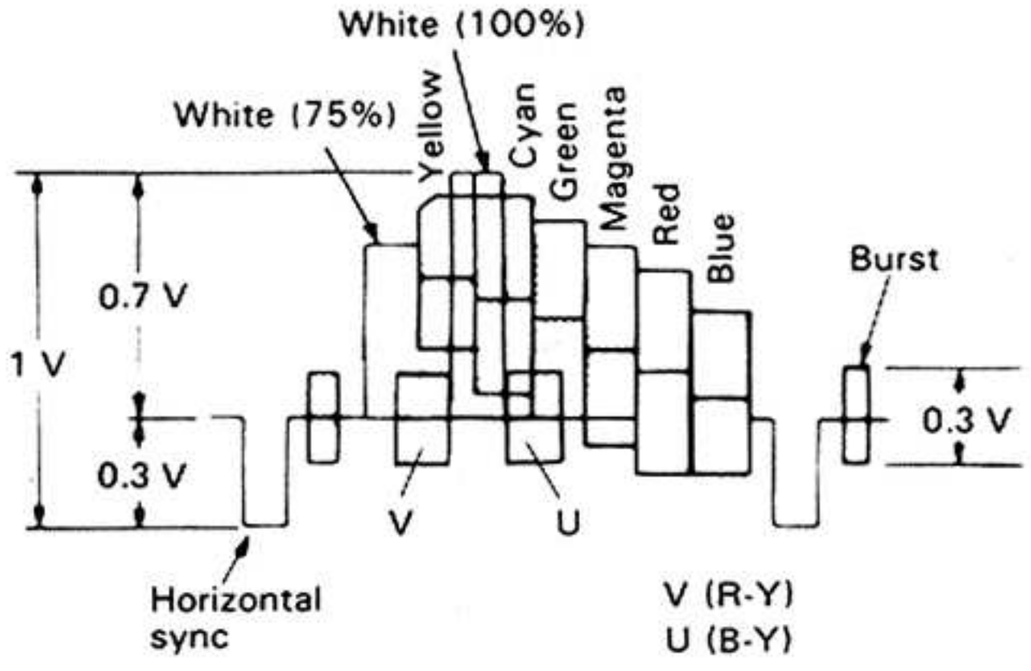


Fig. 2-1-2 Color bar signal waveform

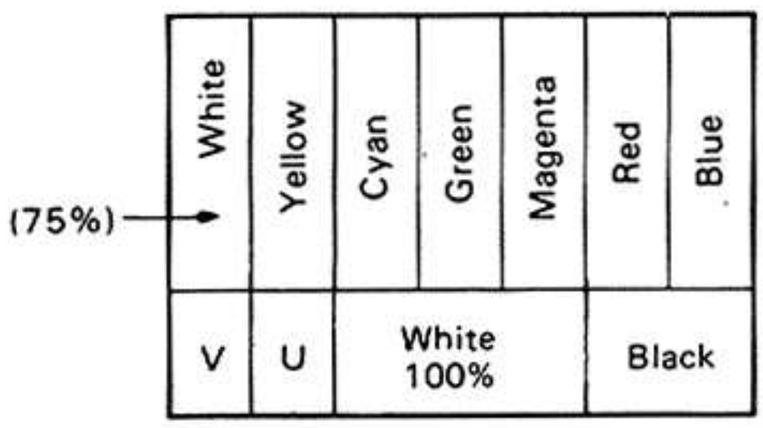


Fig. 2-1-3 Color bar pattern

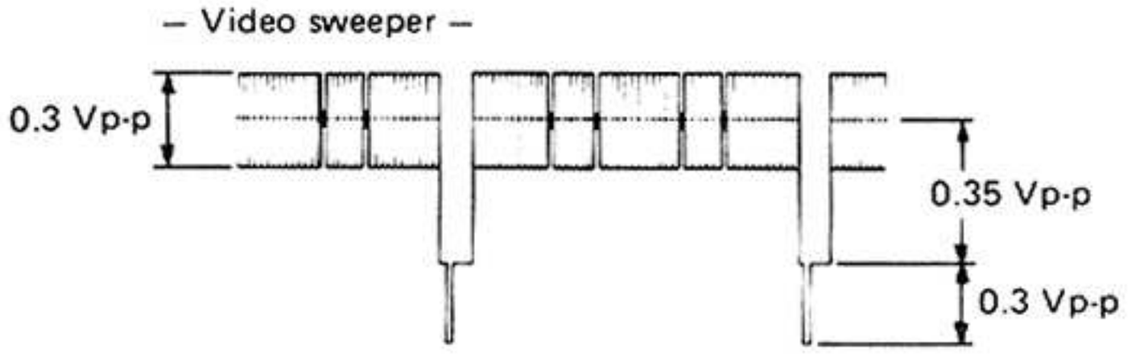


Fig. 2-1-4 Input signal level for video sweeper

2.1.2 Check and adjustment steps

The check and adjustment steps are provided in the following in the form of charts. For clarity, the nomenclature used in the charts is outlined below.

No. Checks and adjustments are numbered in the recommended sequence in which they are to be performed.

Item Name assigned to the particular check and adjustment step.

Check Point Location to which measuring instrument (oscilloscope unless otherwise noted) is to be connected.

Adjustment Parts Variable component (resistor, capacitor, etc.) to be adjusted in this step. Dash (—) indicates check only.

Signal & Mode

- Input signal required to perform adjustment. Dash (—) indicates that special signal is not required.
- Equipment operating mode at time of check or adjustment.

Color bars	Color bars signal as video input.
Stairstep	Stairstep signal as video input.
1 kHz	1 kHz sinewave as audio input signal.
MH-2 color bars	Color bars segment of MH-2 alignment tape.
MH-2 stairstep	Stairstep segment of MH-2 alignment tape.
MH-2 1 kHz	1 kHz audio signal segment of MH-2 alignment tape.
MH-2 RF sweep	RF sweep segment of MH-2 alignment tape.
MH-2L color bars	Color bars segment of MH-2L alignment tape.
MH-2L stairstep	Stairstep segment of MH-2L alignment tape.
MH-2L RF sweep	RF sweep segment of MH-2L alignment tape.
MH-2H color bars	Color bars segment of MH-2H alignment tape.
MH-F2 stairstep	Stairstep segment of MH-F2 alignment tape.
MH-F2 1 kHz	1 kHz FM audio signal segment of MH-F2 alignment tape.
E-E	Power on and machine in Stop mode.
REC	Recording mode
PB	Playback mode
SEARCH	Search (FWDS and REVS) playback mode
SLOW	Slow motion playback mode
STILL	Pause during playback mode
A DUB	Audio dubbing mode
SP mode	SP recording speed
EP mode	EP recording speed
LP mode	LP recording speed
S-VHS mode	Super-VHS recording mode
VHS mode	VHS recording mode

Description This column provides an explanation of the step, notes and adjustment values.

2.2 SWITCHING REGULATOR CIRCUIT

Note: *Unless otherwise noted, all test points and adjustments are located on the SWITCHING REGULATOR board.*

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
1	5 V DC output voltage	TP1	R26 (SWD 5V)	• REC • TUNER	1) Connect a digital voltmeter between TP1 and TP-GND. 2) Record in the TUNER mode, and adjust R26 for 5.345 ± 0.05 V.
2	Semi-REG 15 V output voltage	CN11 pin 1	R9 (SEMI REG 15V)	• REC • TUNER	1) Connect a digital voltmeter between CN11 pin 1 and TP-GND. 2) Record in the TUNER mode, and adjust R9 for 15.2 ± 0.2 V.

2.3 TIMER CIRCUIT

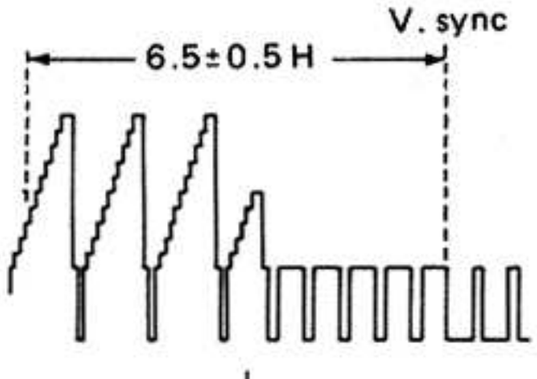
Note: *Unless otherwise noted, all test points and adjustments are located on the TIMER board.*

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
1	Timer clock	TP2 TP1 (GND)	C10	• E-E	1) Connect a frequency counter between TP2 and GND. 2) Short between TP3 (TEST) and GND, then short the leads of electrolytic capacitor C8 once in order to reset IC1. 3) Adjust C10 for 2048.000 ± 0.002 Hz (488.2808 to 488.2818 μs).

2.4 SERVO CIRCUIT

Note: ***Unless otherwise noted, all test points and adjustments are located on the SERVO board.***

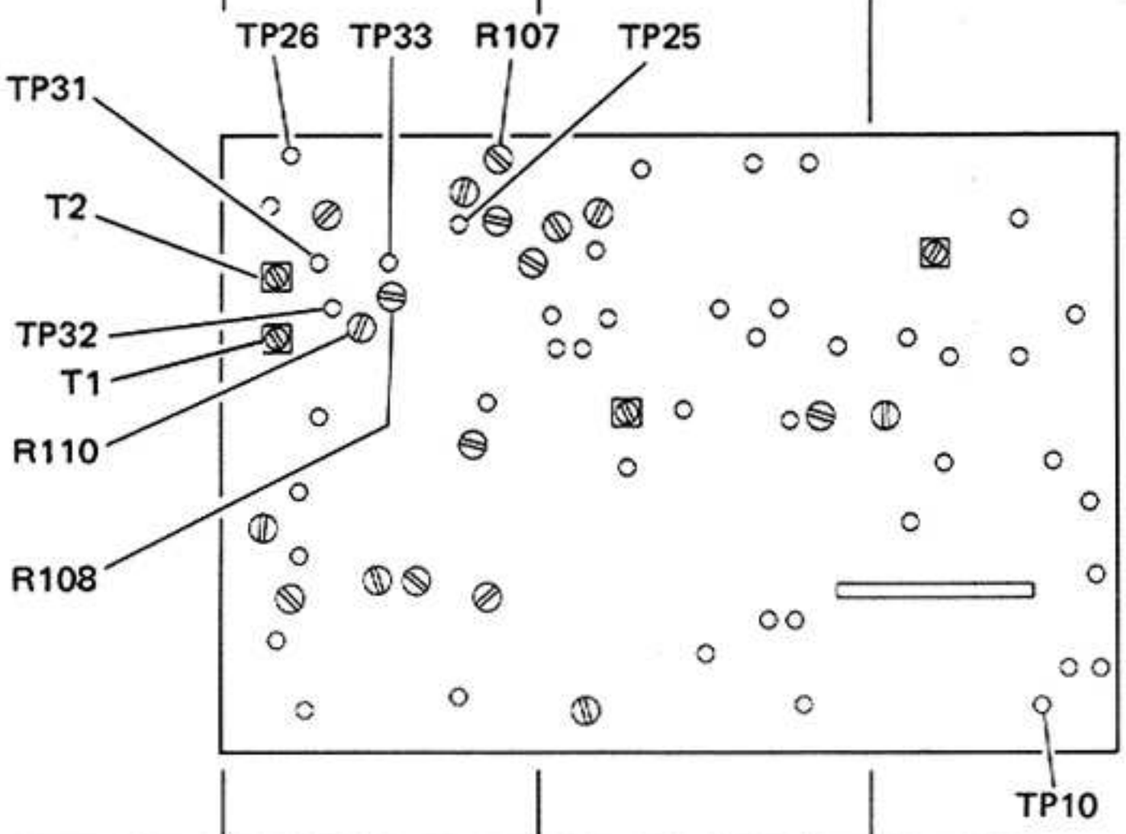
No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
1	SP PB switching point	TP10 (VIDEO board)	R32 (SW POINT)	• PB • MH-2 (stairstep) • Trigger slope (–) • SP mode	1) Connect an oscilloscope to TP10 of the VIDEO board. 2) Play back the stairstep segment of MH-2 alignment tape. 3) Trigger the oscilloscope externally (– slope) with the signal from TP11 of the VIDEO board. 4) Adjust R32 to position the trigger point 6.5 ± 0.5 H from V. sync.
2	SP slow tracking preset	Monitor	R55 (SP SLOW)	• REC ↓ • Slow PB (1/6) • SP	1) Set the TRACKING control of the FRONT to the preset position by simultaneously pressing the + and – TRACKING buttons. 2) Record a color bar signal in the SP mode, then play back in the Slow mode. 3) Adjust R55 to minimize noise bars on the video monitor screen.
	LP slow tracking preset	Monitor	R59 (LP SLOW)	• REC ↓ • Slow PB (1/6) • LP	4) In the same manner, adjust R59 for the LP mode.
3	SP X2 normal tracking preset	Monitor	R38 (SP X2)	• SP • REC ↓ • X2 Play	1) Set the TRACKING control of the FRONT panel to the preset position by simultaneously pressing the + and – TRACKING buttons. 2) Record a color bar signal in the SP mode, then play back in the 2X Play mode. 3) Adjust R38 to minimize noise bars on the video monitor screen.
	EP X2 normal tracking preset	Monitor	R36 (LP X2)	• LP • REC ↓ • X2 Play	4) In the same manner, adjust R36 for the LP mode.
4	V. pulse position	Monitor	R11 (V. LOCK) (REAR panel)	• REC then PB ↓ • STILL • SP • Color bar	1) Record the color bar signal, then play back. 2) In the Still mode, observe the monitor and adjust R11 (REAR panel) for the minimum vertical jitter.

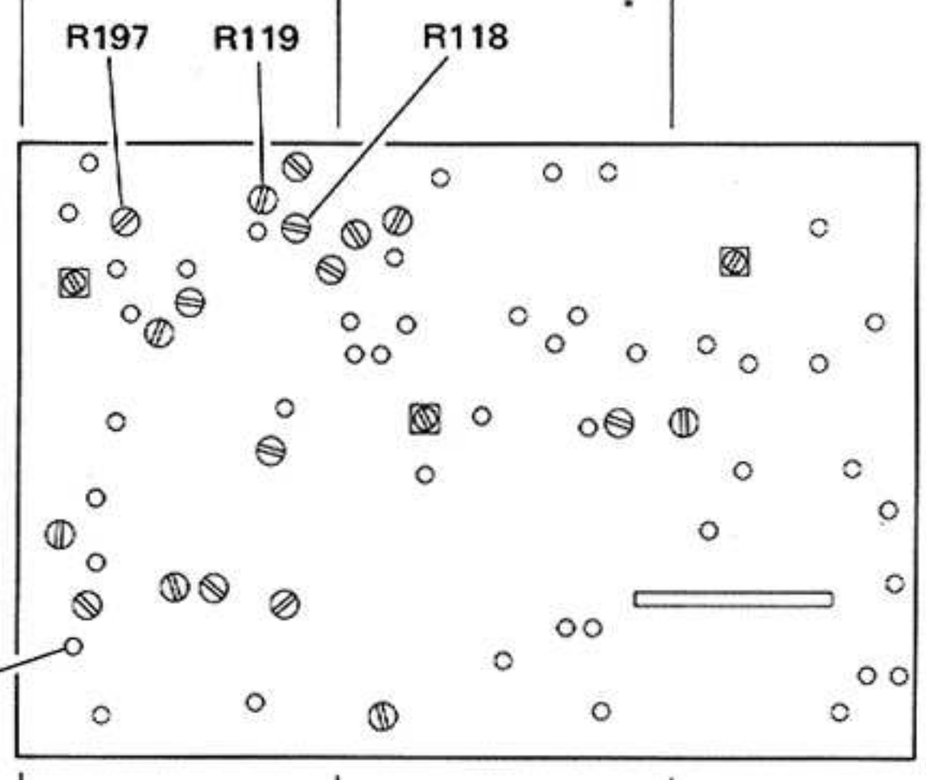


2.5 VIDEO CIRCUIT

Note: *Unless otherwise noted, all test points and adjustments are located on the VIDEO board.*

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
1	Y comb level	TP25 TP26	R107	• S-VHS mode • SP • E-E • Color bar	1) Connect one channel of a dual trace oscilloscope to TP25 and the other channel to TP26. 2) Adjust R107 so that TP25 and TP26 become the same level.
2	2H delayed chroma	TP31 TP32	R110 T2	• S-VHS mode • SP • E-E • Color bar	1) Connect CH-1 of a dual trace oscilloscope to TP31 and CH-2 to TP32. 2) Set VOLT/DIV controls of both channels to the same range (e.g., 50 mV). 3) Invert CH-2 and use ADD mode. 4) Alternately adjust R110 and T2 for minimum level.
3	4H delayed chroma	TP31 TP33	R108 T1	• S-VHS mode • SP • E-E • Color bar	1) In the same manner, adjust R108 and T1 for minimum level.
4	Y-comb	TP34	R119 R118 R197	• VHS mode • SP • E-E • Color bar	1) Connect an oscilloscope to TP34. 2) Adjust R118, R119 and R197 alternately for minimum chromatic level (less than 30 mVp-p of the magenta portion).





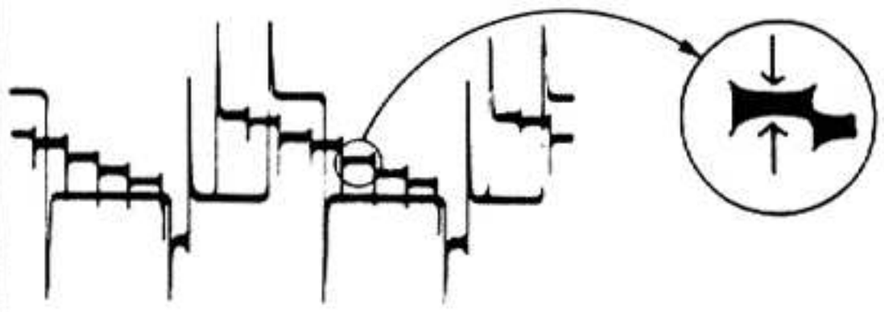
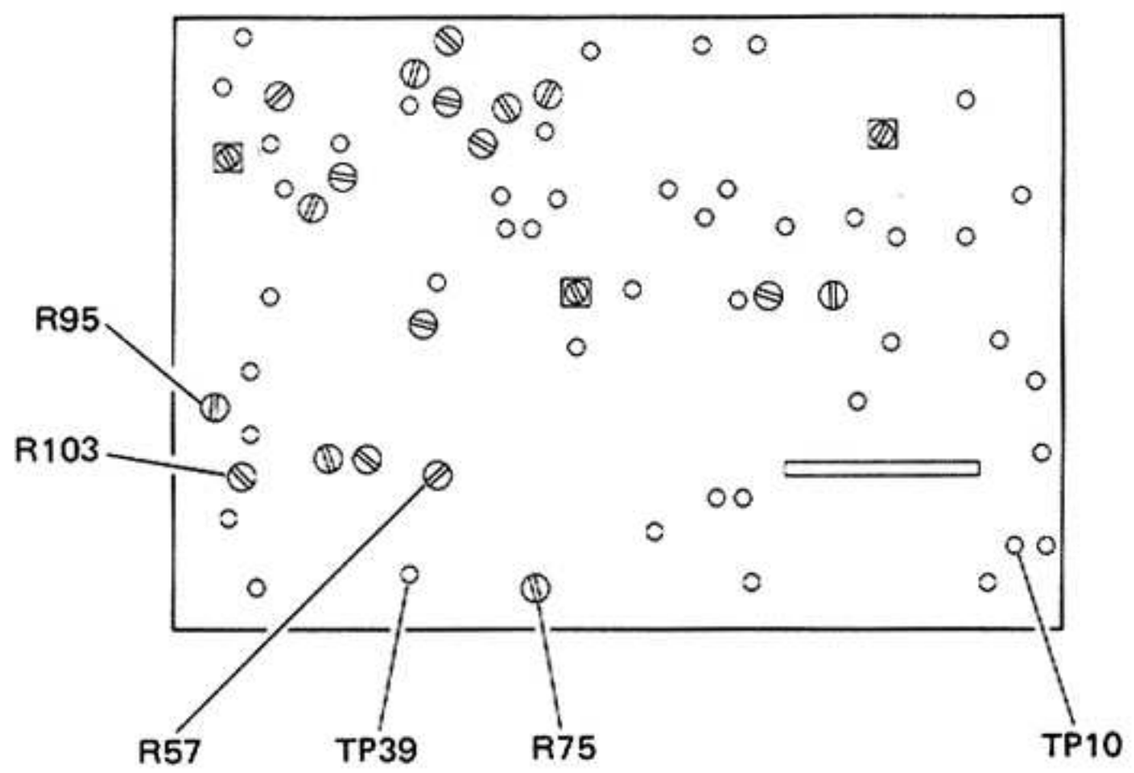


Fig. 2-5-1

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
5	E-E level	TP10	R75	• S-VHS mode • SP • E-E • Color bar	1) Connect an oscilloscope to TP10. 2) Adjust R75 for 0.97 ± 0.03 Vp-p (with 75 Ω load).
6	Sub emph. input level	TP39	R57	• S-VHS mode • SP • E-E • Color bar	1) Connect an oscilloscope to TP39. 2) Adjust R57 for 400 ± 20 mVp-p siganl level in the SP mode.
7	S-VHS mode REC FM level	TP3 (PRE/REC)	R103 (S-MODE REC FM)	• S-VHS mode • LP mode • REC • Color bar	**Note:** *Connect an oscilloscope's GND terminal to TP-GND near the shield case of the PRE/REC board.* 1) Connect an oscilloscope to TP3 of the PRE/REC board and record a color bar signal in the LP mode. 2) Adjust R103 for 3.0 ± 0.2 Vp-p pedestal level, between centers of the waveform outline at the pedestal portion.
8	VHS mode REC FM level	TP3 (PRE/REC)	R95 (VHS REC FM)	• VHS mode • LP mode • REC • Color bar	1) In the same manner as above (2.5.7), adjust R95 for 2.0 ± 0.1 Vp-p pedestal level.



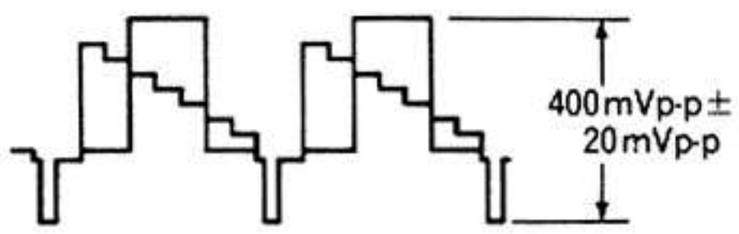


Fig. 2-5-2

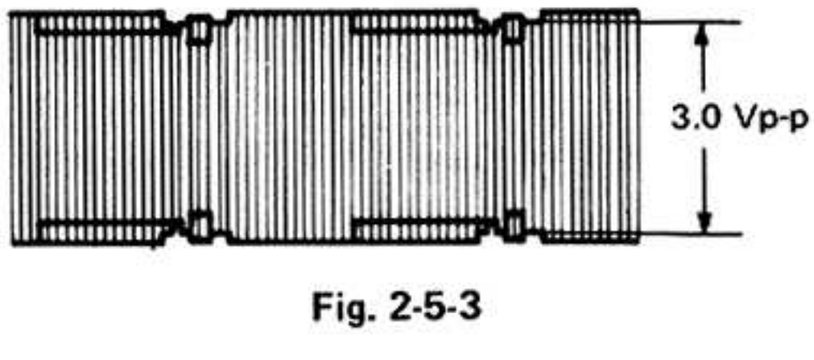
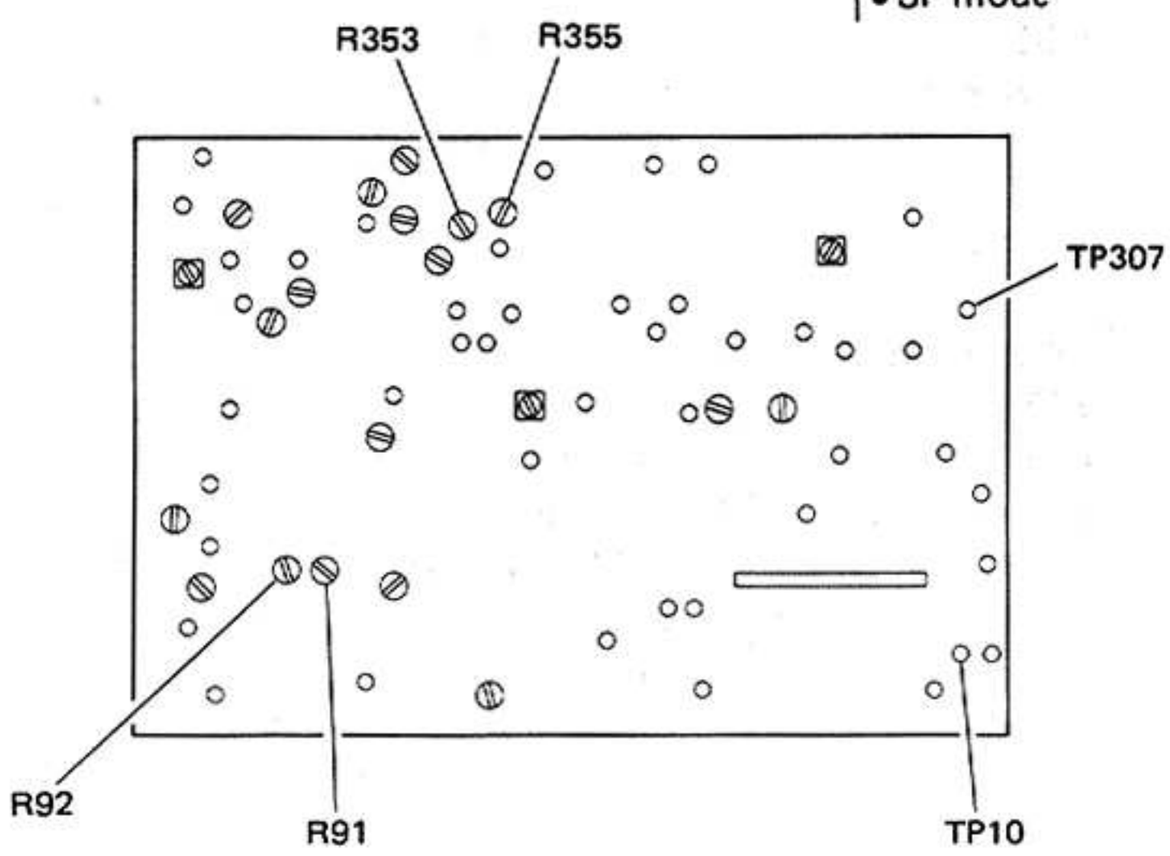


Fig. 2-5-3

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
9	SP REC color level and balance	TP307	R355 (SP REC COLOR)	• S-VHS mode • PB mode • MH-2H color bars • SP mode --- • REC then PB • Color bars • SP mode	**Note:** ***Use larger-level waveform for adjustment.*** 1) Connect an oscilloscope to TP307. Play back the color bar segment of the MH-2H and observe color signal level. 2) Adjust by pressing the + and – TRACKING buttons of the FRONT panel for maximum level of the color waveform and make a note of the higher color level "A". 3) Set the TRACKING control of the FRONT panel to the preset position by simultaneously pressing the + and – TRACKING buttons. 4) Record and play back the color bar signal. If necessary, before recording, adjust R355 so that the higher level channel becomes 110% of the noted level "A" during playback. At this time, confirm that the channel difference is within 3 dB.



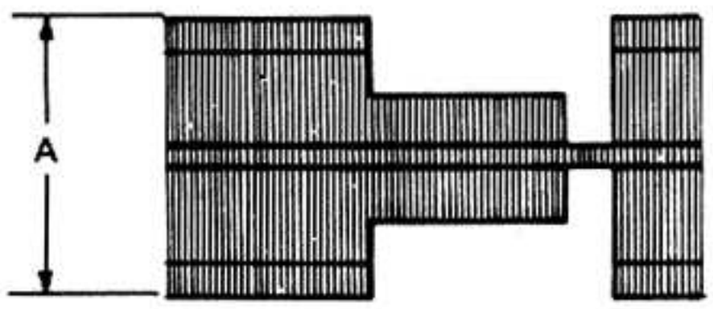


Fig. 2-5-4

10	LP REC color level and balance	TP307	R353 (LP REC COLOR)	• S-VHS mode • PB mode • LP mode • MH-2H color bar --- • REC then PB • Color bar • LP mode	**Note:** ***Perform the LP mode adjustment after completing that for the SP mode.*** 1) Connect an oscilloscope to TP307. Play back the color bar segment of the MH-2H and observe color signal level. 2) Adjust by pressing the + and – TRACKING buttons of the FRONT panel for maximum level of the color waveform and make a note of the higher color level "A". 3) Set the TRACKING control of the FRONT panel to the preset position by simultaneously pressing the + and – TRACKING buttons. 4) Record and play back the color bar signal. If necessary, before recording, adjust R353 so that the higher level channel becomes 110% of the noted level "A" during playback. At this time, confirm that the channel difference is within 3 dB.

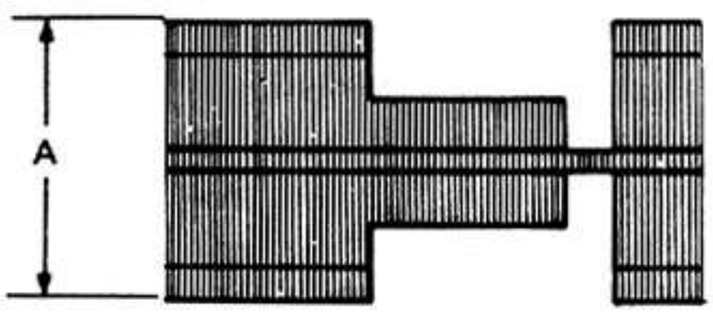
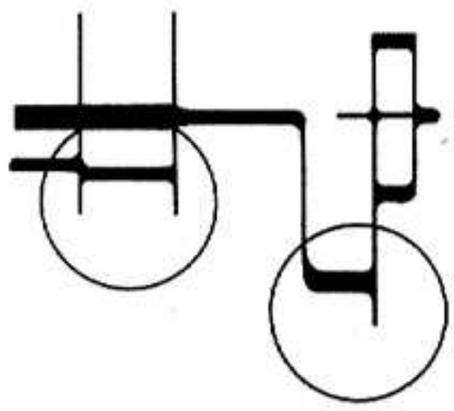
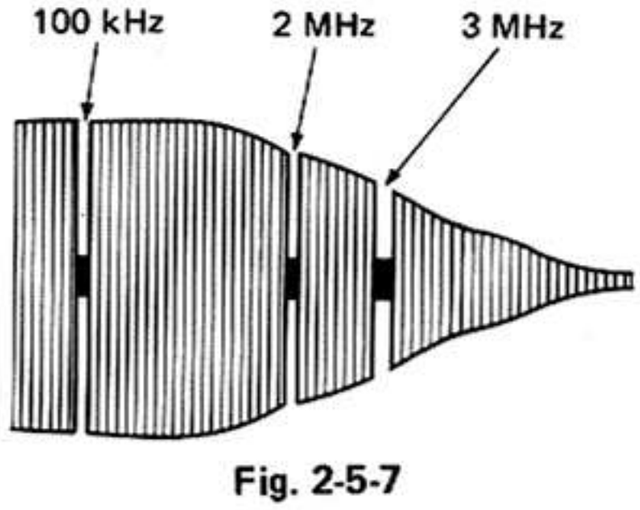


Fig. 2-5-5

11	S-VHS bmod PB Y level	VIDEO OUT or TP10	R92 (S VHS PB Y LEVEL)	• S-VHS mode • SP mode • REC then PB • Color bars	1) Connect an oscilloscope to VIDEO OUT (TP10). 2) Record the color bar signal in the SP mode, then play it back. 3) Adjust R92 for 0.97 ± 0.03 Vp-p (with 75 Ω load).

<table>
<tr><th>No.</th><th>Item</th><th>Check Point</th><th>Adjustment Parts</th><th>Signal & Mode</th><th>Description</th></tr>
<tr><td>12</td><td>VHS mode
PB Y level</td><td>VIDEO OUT
or
TP10</td><td>R91
(VHS
PB Y LEVEL)</td><td>• VHS mode
• SP mode
• REC then PB
• Color bars</td><td>1) In the same manner as above (2.5.11), adjust R91 for 0.97 ± 0.03 Vp-p (with 75 Ω load).</td></tr>
<tr><td>13</td><td>Sharpness
preset</td><td>TP24</td><td>R42</td><td>• S-VHS mode
• SP
• E-E
• Sweeper

• S-VHS mode
• SP
• PB
• Color bar
• EDIT SW: OFF</td><td>1) Connect an oscilloscope to TP24.
2) Set the SHARPNESS control of the FRONT panel to the center detent position.
3) Adjust R42 so that the 2 MHz mark, in the state of EDIT SW "OFF", becomes nearly equal to that in the state of EDIT SW "ON".

Alternate method:
1) Connect an oscilloscope to TP110 (Y OUT).
2) Set the SHARPNESS control of the FRONT panel to the center detent position.
3) Play the color bar signal of the MH-2H (or MH-2 if MH-2H is not available) alignment tape.
4) Adjust R42 (SHARPNESS PRESET) to where slight overshoot appears at the sync tip as shown in Fig. 2-5-6.
 
Fig. 2-5-6</td></tr>
<tr><td>14</td><td>S-VHS mode
SP frequency
response and
balance</td><td>TP110</td><td>R108
[PRE/REC
board]</td><td>• S-VHS mode
• SP mode
• REC then PB
• Sweeper</td><td>1) Terminate TP110 (S-OUT) with a 75 Ω load and set the SHARPNESS control to the center detent position.
2) Connect a signal generator to S-IN and an oscilloscope to TP110.
3) Record in the SP mode, then play back and set 100 kHz level to 3 scale divisions on X axis at CH-1 waveform.
4) Adjust R108 (PRE/REC board) so that the 3.0 MHz level becomes 2.5 to 2.8 scale divisions (−1 ± 0.5 dB).
5) Confirm that the level difference between both channels is less than 2 dB.
 
Fig. 2-5-7</td></tr>
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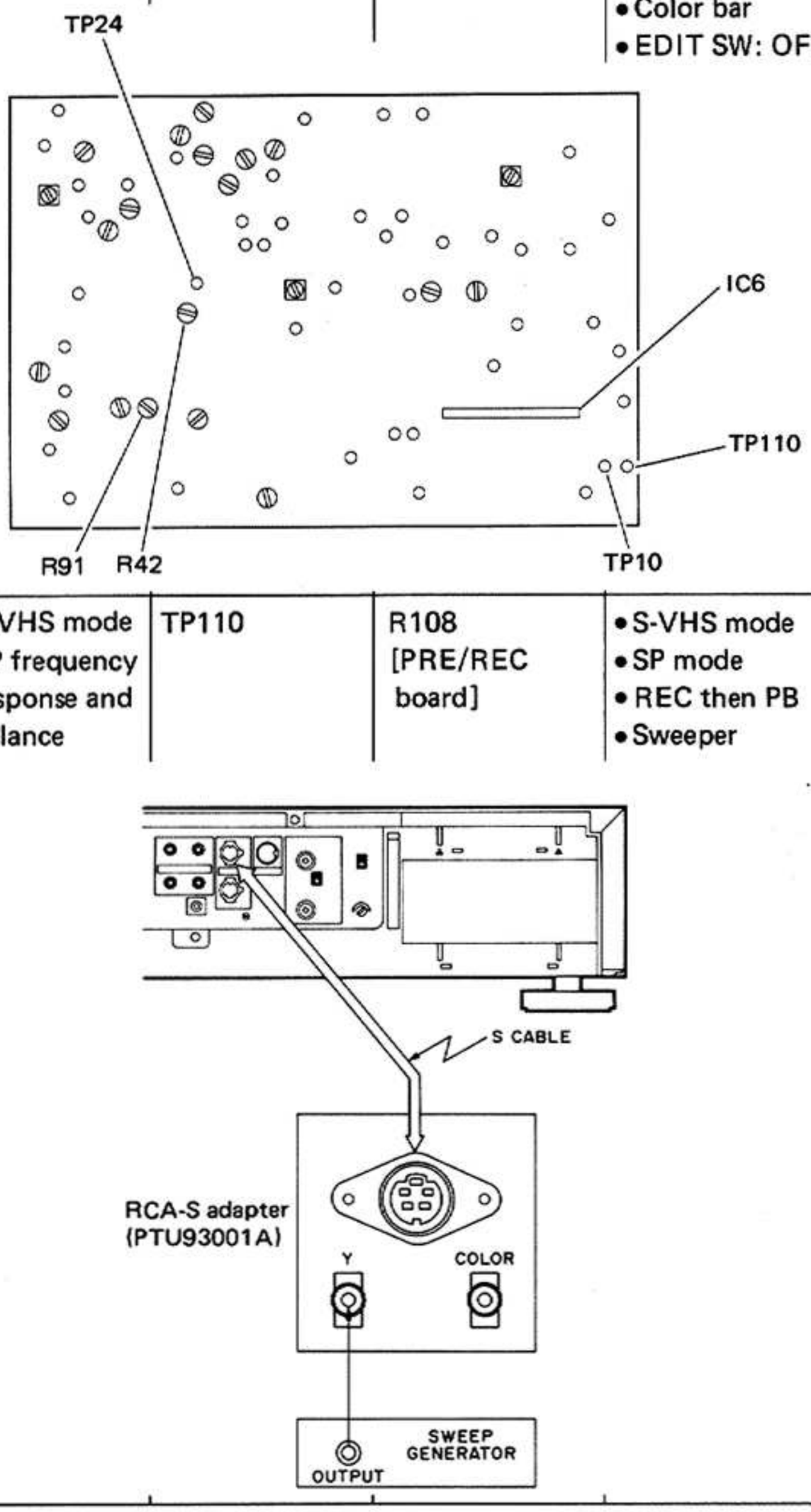
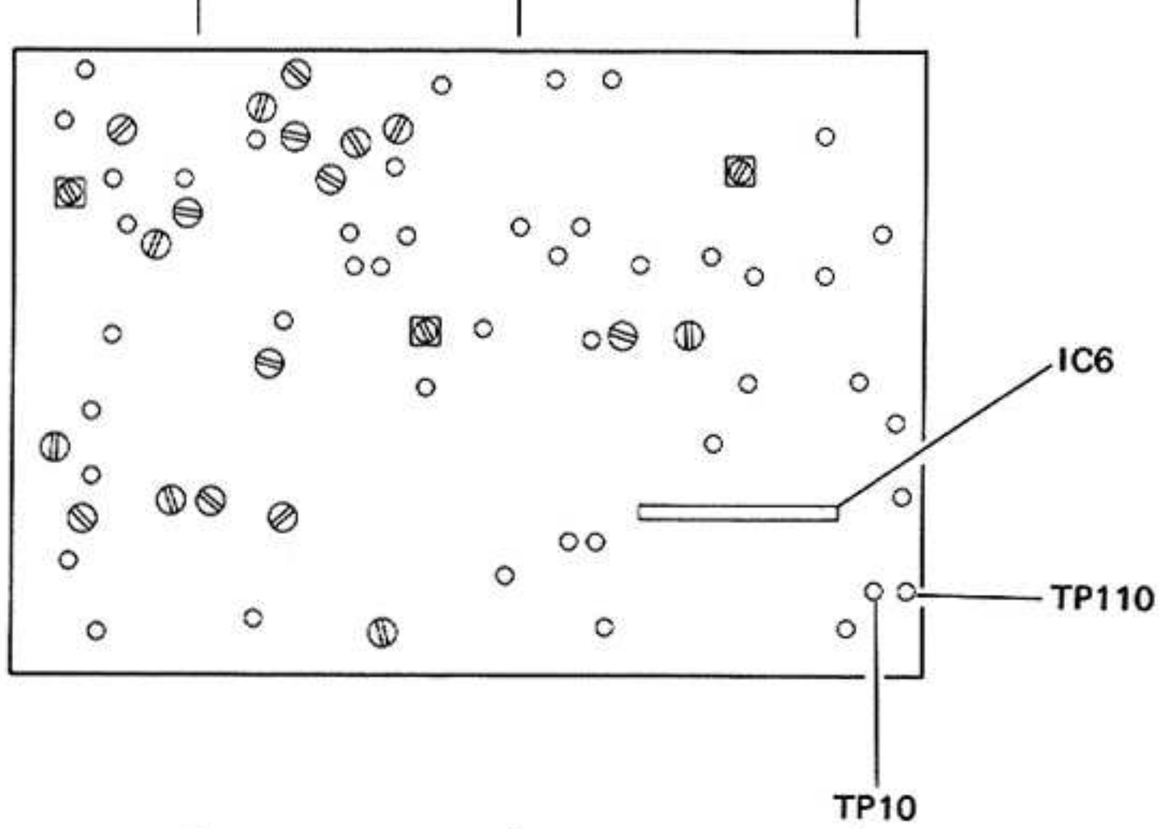


No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
15	S-VHS mode LP frequency response and balance	TP110	R106 [PRE/REC board]	• S-VHS mode • LP mode • REC then PB • Sweeper	1) In the same manner as above (2.5.14), perform adjustment for LP mode. 2) Record in the LP mode, then play back and set 100 kHz level to 3 scale divisions on X axis at CH-1 waveform. 3) Adjust R106 so that the 3.0 MHz level becomes 2.0 to 2.3 scale divisions (−3 ± 0.5 dB). 4) Confirm that the level difference between both channels is less than 2 dB.
		Monitor	R108 (SP) R106 (LP) [PRE/REC board]	• S-VHS mode • SP and LP modes • REC then PB • Philips pattern	**Alternate method:** 1) Record and playback a Philips pattern. 2) During playback, observe the picture and adjust R108 (SP mode) and R106 (LP mode) for the best resolution, without impaired S/N, at about 250 lines (3 MHz region). 3) So after this adjustment, confirm black or white spot on edges of playback picture in the Still mode.
16	VHS mode SP frequency response and balance	TP110	R130 [PRE/REC board]	• VHS mode • SP mode • REC then PB • Sweeper	1) Terminate TP110 (S-OUT) with a 75 Ω load and set the SHARPNESS control to the center detent position. 2) Connect a signal generator to S-IN and an oscilloscope to TP110. 3) Record in the SP mode, then play back and set 100 kHz level to 3 scale divisions on X axis at CH-1 waveform. 4) Adjust R130 (PRE/REC board) so that the 2.0 MHz level becomes 2.4 to 3 scale divisions (−1 ± 1 dB). 5) Confirm that the level difference between both channels is less than 2 dB.



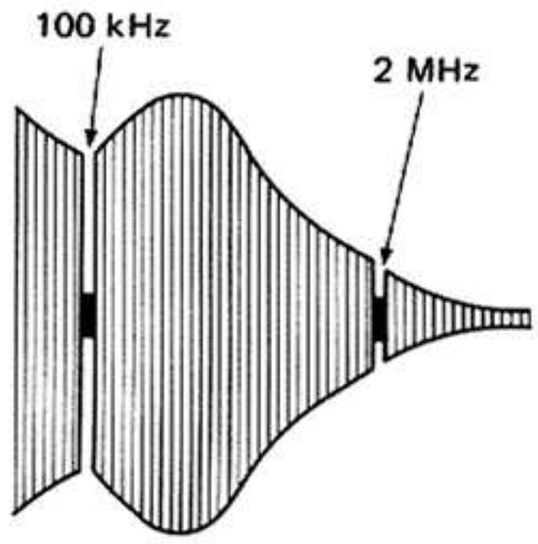
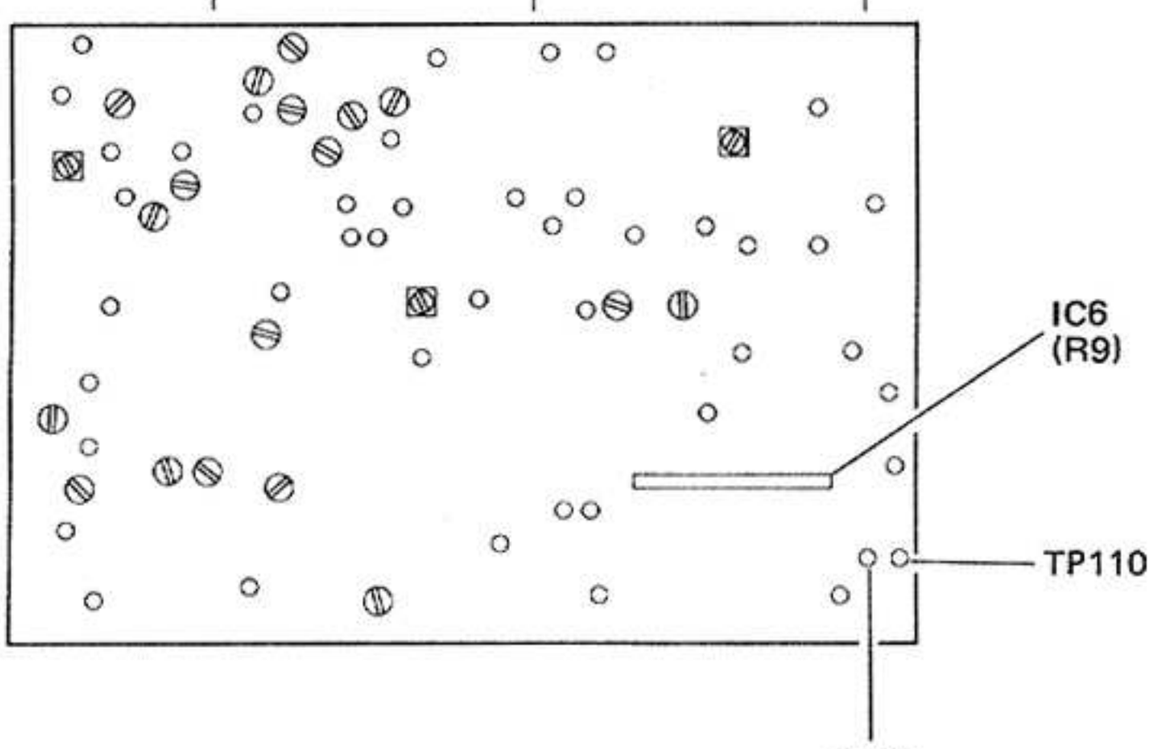


Fig. 2-5-8

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
17	VHS mode LP frequency response and balance	TP110	R131 [PRE/REC board]	• VHS mode • LP mode • REC then PB • Sweeper	1) In the same manner as above (2.5.16), perform adjustment for LP mode. 2) Record in the LP mode, then play back and set 100 kHz level to 3 scale divisions on the screen at CH-1 waveform. 3) Adjust R131 (PRE/REC board) so that the 2 MHz level becomes 1.5 to 2.4 scale divisions (-5^{+3}_{-1} dB). 4) Confirm that the level difference between both channels is less than 2 dB.
	Monitor	R130 (SP) R131 (LP) [PRE/REC board]	• VHS mode • SP and LP modes • REC then PB • Philips pattern	**Alternate method:** 1) Record and play back a Philips pattern. 2) During playback, observe the picture and adjust R130 (SP mode) and R131 (LP mode) for the best resolution, without impaired S/N, at about 160 lines (2 MHz region). 3) So after this adjustment, confirm black or white spot.
18	0.5H delayed color level	TP10	R9 (incl. IC6)	• Color bar • LP mode • REC then PB ↓ • SEARCH FF	1) Connect an oscilloscope to VIDEO OUT or TP10 and set the time base of the oscilloscope to 2 ms/div. Trigger the oscilloscope externally (+ slope) with the signal from TP11 (DRUM FF) or the VIDEO board. 2) During Search, adjust R9 so that the Y level difference is uniform at VIDEO OUT as shown in the figure 2-5-9.



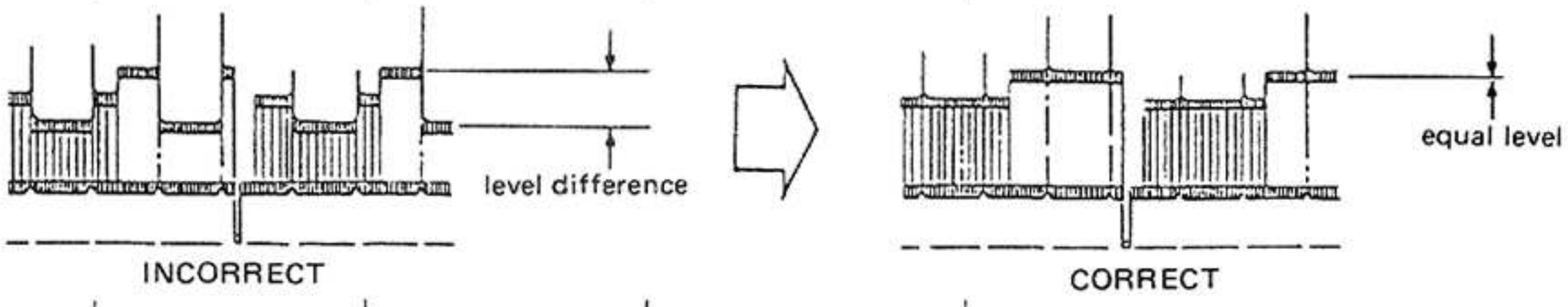
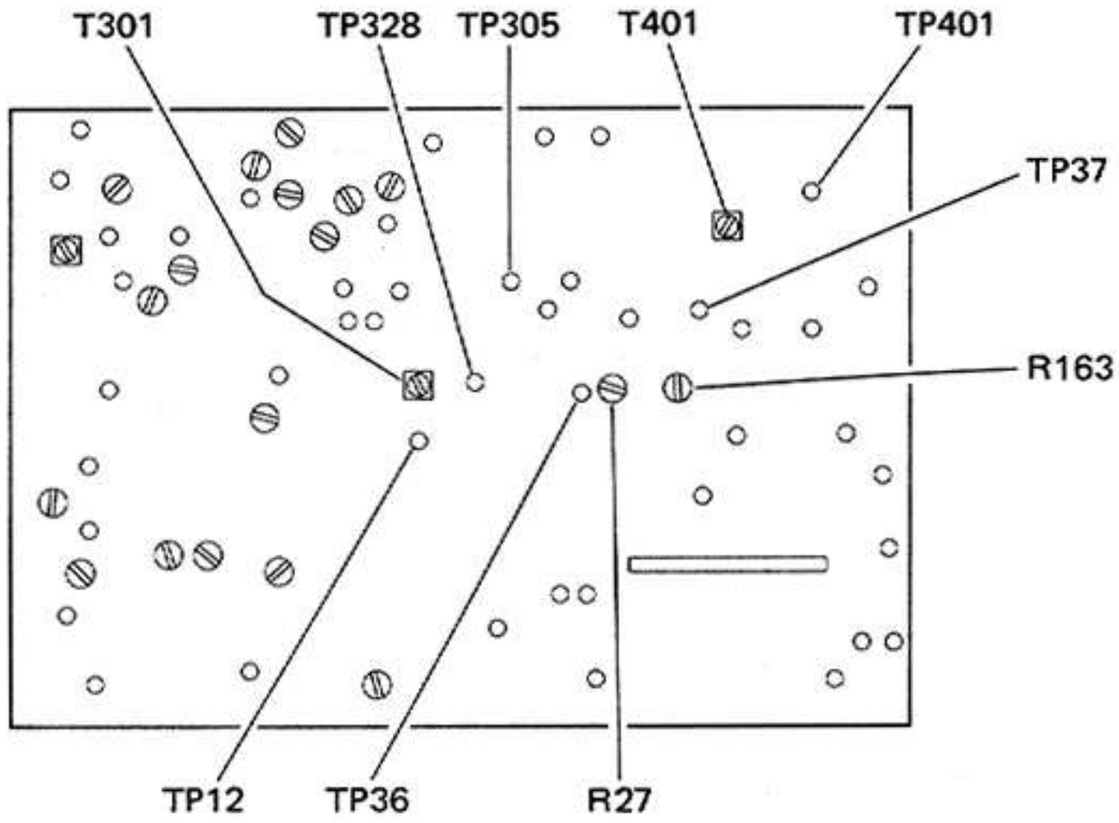


Fig. 2-5-9

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
19	APC error phase	TP305 TP328	T301	• REC then PB • Color bar • SP mode	1) Connect one channel of a dual trase oscilloscope to TP305 and the other channel to TP328. Trigger the oscilloscope exterrally (– slope) with the signal from TP12 (H. SYNC). 2) Set the oscilloscope for ALT mode. 3) Adjust T301 to position the zero-cross 30 μsec ± 3 μsec from the center of the burst signal as shown in the figure 2-5-10.
20	SECAM DET.	TP401	T401	• E-E • SECAM color bar	1) Connect an oscilloscope to TP401. 2) Adjust T401 so that A and B are related as follows: A : B = 3 : 4
21	0.25H delayed VIDEO-1	TP36	R163	• E-E • Color bar	1) Connect an oscilloscope to TP36. 2) Adjust R163 for maximum output level.
22	0.25H delayed VIDEO-2	TP36 TP37	R27	• E-E • Color bar	1) Connect one channel of a dual-trace oscilloscope to TP36 and the other channel to TP37. 2) Set the oscilloscope for ALT mode. 3) Adjust R27 for equal channel levels.



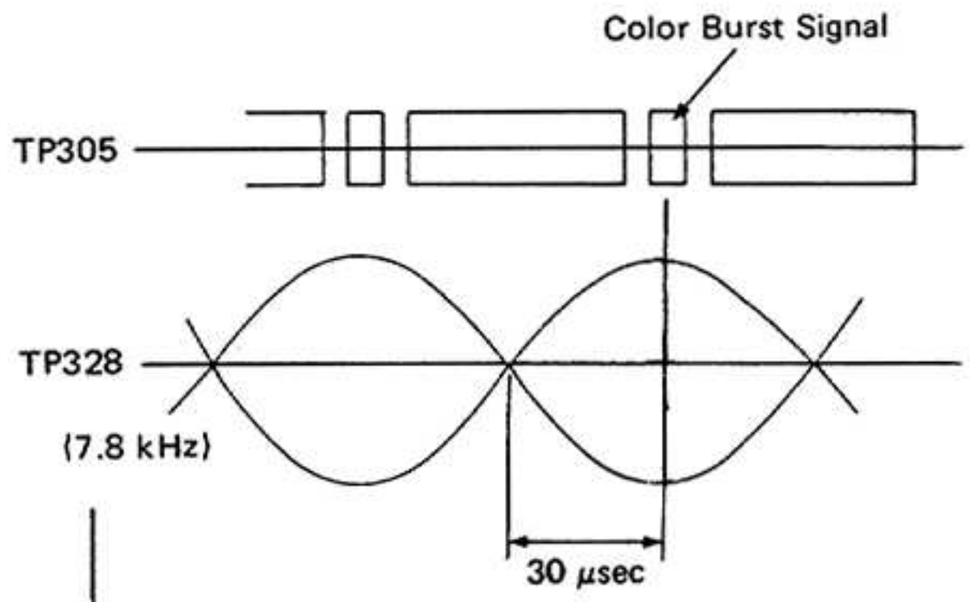


Fig. 2-5-10

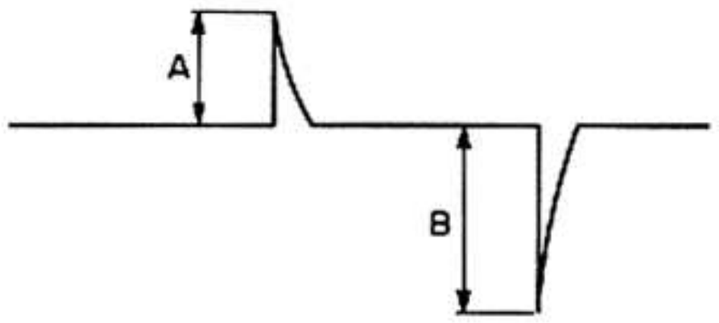


Fig. 2-5-11

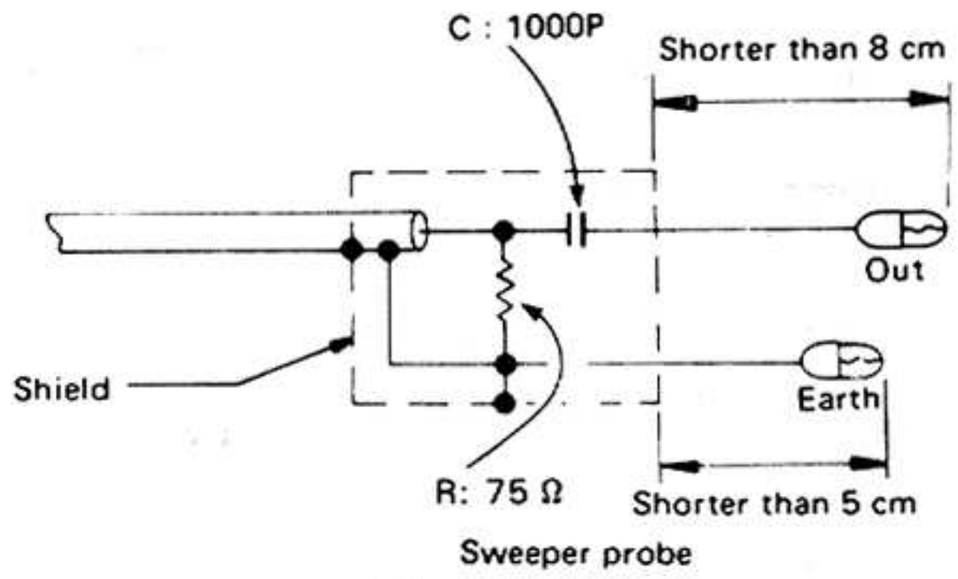
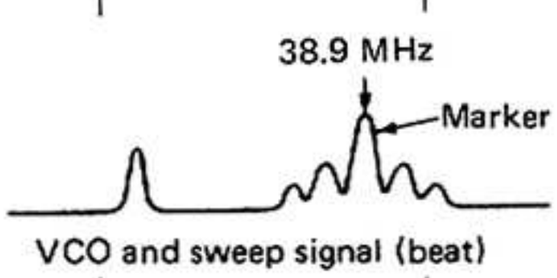
2.6 AUDIO CIRCUIT

Note: ***Unless otherwise noted, all test points and adjustments are located on the AUDIO board.***

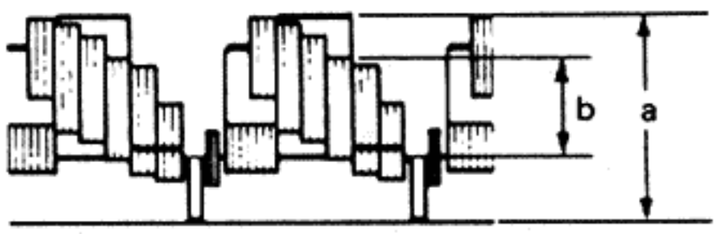
No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
1	Audio bias level	TP31 TP32	R9 (BIAS ADJ)	• VHS mode • SP mode • No signal	1) Connect a millivoltmeter between TP31 and TP32. 2) Set for REC mode without signal. 3) Adjust R9 for 2.2 mVrms.
2	Audio PB level	AUDIO OUT	R28 (PB LEVEL ADJ)	• REC then PB • SP and LP mode • VHS mode • Audio monitor to Normal	1) Connect an audio tester to AUDIO OUT. 2) Supply an audio signal (–8 dBs/1 kHz) to Peri. IN and record together with a video signal, then play back. 3) Adjust R28 so that the audio output level during playback becomes –6 ± 1 dBs at SP mode (–6 ± 2 dBs at LP mode).
3	REC FM level	TP53	R80 (FM REC ADJ)	• S-VHS mode • SP mode • REC then PB • No signal	1) Connect an oscilloscope to TP53. 2) Record in the SP mode, without an audio signal, then play back. 3) Adjust R80 for 50 mVp-p ± 5 mVp-p FM audio playback voltage.
4	E-E level	AUDIO OUT	R40 (E-E LEVEL[L]) --- R41 (E-E LEVEL[R])	• ALC: OFF • REC mode • Audio monitor to Hi-Fi	1) Suplly a 1 kHz, –8 dBs audio signal to Peri. IN and a video signal to Peri. IN. 2) Set Hi-Fi REC level controls to detent position. In the REC mode, adjust R40 to obtain –6 ± 0.5 dBs at AUDIO OUT. --- 3) In the same manner, adjust R41 for the R (CH-2) channel.
5	Level indicator	FDP (LEVEL IND.)	R73 (LEVEL IND [L]) --- R74 (LEVEL IND [R])	• Audio monitor to Hi-Fi • E-E (Stop) mode • LEVEL INDICATOR SW: ON	**Note:** ***Perform the level indicator adjustment after completing the E-E level adjustment (section 2.6.4).*** 1) Supply a 1 kHz, –8 dBs audio signal to Peri. IN. 2) Set Hi-Fi REC level controls to detent position. In the E-E (Stop) mode, adjust R73 to the point where the FDP level indicators show 0 dB. --- 3) In the same manner, adjust R74 for the R (CH-2) channel.

2.7 TUNER/IF CIRCUIT

Note: ***Unless otherwise noted, all test points and adjustments are located on the TUNER/IF board.***

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
	• **Equipment required:** 1. Oscilloscope 2. IF sweep signal generator with suitable markers (PIF, SIF, etc.) 3. Sweeper probe (sweep signal supply cable) as shown on the right.  **Fig. 2-7-1**				
1	VCO	IC1 pin 28	T2 (VCO)	• Sweep generator out: 70 dBμ (38.9 MHz) • Tuner mode without antenna IN	1) Use a sweeper probe as shown in Fig. 2-7-1 and connect the sweep generator output to pin 1 of SAW 1. Adjust the sweep gain so that the waveform does not distort as observed with the oscilloscope. Connect the oscilloscope to pin 28 of IC1 (VIDEO DET OUT) and adjust T2 to align the waveform with the frequency marker as shown in Fig. 2-7-2.
				• TV broadcast • Tuner mode	**Alternate method:** 1) Receive a color broadcast on a VHF-HI channel (7 to 13). 2) Adjust T2 to obtain a fine picture on the monitor.
	 VCO and sweep signal (beat) **Fig. 2-7-2**				
	• **Before the following adjustments:** 1. Connect a cable to ANT IN and terminate TV OUT at 75 Ω. 2. Set a TV channel signal generator as follows. Video : 70 dBμ/75 Ω, color bar 87.5% modulation Audio : 62 dBμ/75 Ω, 1 kHz ± 25 kHz deviation				
2	RF AGC	IF terminal of Front end	R21 (RF AGC)	• TV signal • Tuner mode	1) Connect the oscilloscope to IF terminal of U/V Tuner (Front end). Adjust R21 for maximum level, then again adjust R21 for −10 dB gain.
		Monitor	R21 (RF AGC)	• TV broadcast • Tuner mode	**Alternate method:** **Note:** ***Adjust R21 (RF AGC) to correct for excess noise in the picture or when streaky cross interference occurs due to strong electrical fields.*** 1) Adjust R21 to minimize noise or streaks on the TV screen. 2) Check for absence of abnormality on all channels.

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
3	Color level	JP1 pin 12	R40 (COLOR LEVEL)	• TV broadcast • Tuner mode • Color bar	1) Receiving a color bar signal, set the Y level for 100% reference signal and then adjust R40 for a magenta level of 56% at pin 12 of JP1.



Y level = 1 a : b = 1 : 0.56
Magenta level = 0.56

Fig. 2-7-3

2.8 DEMODULATOR CIRCUIT

Note: ***Unless otherwise noted, all test points and adjustments are located on the DEMODULATOR board.***

Audio Multiplex TV Signal Generator

Recommended Specifications

1. Signal Format	Based on CCIR-B
2. Frequency	
Video Carrier Fv	38.9 MHz
1st Sound Carrier fs_1	33.4 MHz
2nd Sound Carrier fs_2	33.1578125 MHz
3. Modulator	
Video	Crosshatch (black on white) V: 50 Hz, H: 15.625 kHz
Audio	Sinewave 1 kHz; CH1 and CH-2 outputs switchable
4. Output	97 dB/μV (open) ± 2 dB fixed, BNC-R 75 Ω
5. P-S Ratio	S_1 P – 13 dB ± 2 fixed S_2 P – 20 dB ± 2 fixed
6. Modulation	
Video	87.5% ± 3%
Audio	±30 kHz ± 2 kHz
7. Stereo Separation	Less than –40 dB
8. Pilot Signal	
Carrier Frequency	54.6875 kHz ± 5 Hz synchronized type
Stereo	117.5 Hz AM 50%
Dual	274.1 Hz AM 50%

9. Sound Modulation Modes	S_1	S_2
Mono	Mono 1	Mono 2
Stereo	(L + R)/2	R
Dual	Mono 1	Mono 2

10. Functions	S_1	S_2
Mono (M)	100%	100%
Stereo (L, R)	(L+R)/2	R
(L)	L/2	–
(R)	R/2	R
(OFF)	–	–
Mult (S_1, S_2)	100%	100%
(S_1)	100%	0
(S_2)	0	100%
(OFF)	0	0

V. MOD (ON/OFF)

11. Frequency Accuracy	Within $\pm 5 \times 10^{-5}$
12. Spurious	Less than –50 dB
13. Saw Filter	Self-contained

No.	Item	Check Point	Adjustment Parts	Signal & Mode	Description
1	First audio detector coil	IC1 pin 3	T4 [IF PWB]	•BILING mode •SUB: unmod. •MAIN: mod.	1) Apply Main audio modulated signal to the front end IF terminal. 2) Connect a distortion meter to IC1 pin 3. 3) Adjust T4 of the IF baord for minimum distortion. **Note:** ***Audio multiplex TV signal generator connection is the same for the following adjustments.***
2	Second audio detector coil	IC1 pin 2	T1	• BILING mode • SUB: mod. • MAIN: unmod.	1) Connect a distortion meter to IC1 pin 2. 2) Adjust T1 of the IF board for minimum distortion.
3	Stereo separation	IC1 pin 5	R2	• STEREO mode • R : mod. • L : unmod.	1) Set a signal generator to Stereo mode, but adjust only the R channel. 2) Connect an oscilloscope to IC1 pin 5. 3) Adjust R2 for minimum output level.
4	Buzz	CN2 pin 2	T8, T2 [IF PWB]	• STEREO mode • R/L : unmod.	1) Connect a noise meter to CN2 pin 2 and an oscilloscope to AC output of the noise meter. 2) Adjust T8 of the IF board for minimum Philips pattern noise. 3) Adjust T2 of the IF board for minimum crosshatch noise.
5	Audio output level	CN2 pin 2 (L) CN2 pin 4 (R)	R21 (L) R24 (R)	• STEREO mode • R: mod./unmod. • L: unmod./mod.	1) Set a signal generator for Stereo mode. 2) Connect an audio meter to CN2 pin 2. 3) Adjust R21 (L channel) for –14.0 dBs. 4) Similarly, connect an audio meter to pin 4 of CN2 and adjust R24 for the R channel.

2.9 PRE/REC CIRCUIT

Note: *Unless otherwise noted, all test points and adjustments are located on the PRE/REC board.*

<table>
<tr><th>No.</th><th>Item</th><th>Check Point</th><th>Adjustment Parts</th><th>Signal & Mode</th><th>Description</th></tr>
<tr><td rowspan="6">1</td><td rowspan="6">Video head resonance & Q (quality factor)</td><td rowspan="3">TP6</td><td>CH-1
C7 (F)
R11 (Q)</td><td>• Sweep signal
• PB
• SP mode</td><td>Note: 1) This adjustment is required only when flicker or black fringe noise appears after replacing the upper drum (video heads).
2) Connect ground of probe (oscilloscope) to shield case of the PRE/REC board.
3) Set the adjust coil after loading and remove it before unloading to prevent damage by loading poles.
1) Disconnect a connector of CN1 from the SERVO board. Connect and use the Q adjust fixture (PTU94006A) as shown in Fig. 2-9-1.
2) Set for the playback mode with a dummy cassette.*
* Dummy cassette: Cut the tape and cover the photo sensing holes with opaque tape.
3) Set the adjust coil onto the upper drum as shown in Fig. 2-9-2.
4) Connect an oscilloscope to TP6 of the PRE/REC board.
Supply a sweeper generator output to the adjustment as shown in Fig. 2-9-2.
Then, adjust the sweeper generator gain so that the waveform does not distort at TP6.
5) Trigger the oscilloscope externally with the signal from TP11 (DRUM FF) of the VIDEO board. Use (–) trigger for CH-1 and (+) trigger for CH-2.
6) Adjust C7 to set the CH-1 resonance point to 8 MHz. Use the control of the oscilloscope to position the 1 MHz region at graduation 2 of the oscilloscope scale.
7) Adjust R11 to position the 8 MHz portion at 4 of the oscilloscope graduation as shown in Fig. 2-9-3.</td></tr>
<tr><td>CH-2
C5 (F)
R15 (Q)</td><td></td><td>8) Change the adjust coil to CH-2 position, and, in the same manner as for CH-1, adjust C5 and R15 for CH-2.</td></tr>
<tr><td rowspan="2">TP7</td><td>CH-1
C4 (F)
R13 (Q)</td><td>• Sweep signal
• PB
• LP mode</td><td>9) Repeat the above steps (1 to 7) for the LP mode.
Adjust resonance with C4 and Q with R13.</td></tr>
<tr><td>CH-2
C2 (F)
R12 (Q)</td><td></td><td>10) Similarly, perform adjustment in the same manner as for CH-1.
Adjust resonance with C2 and Q with R12.</td></tr>
</table>

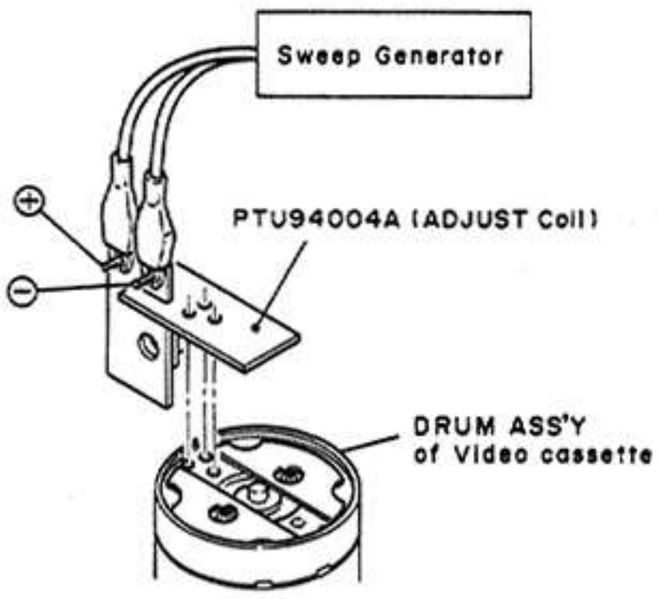


Fig. 2-9-2

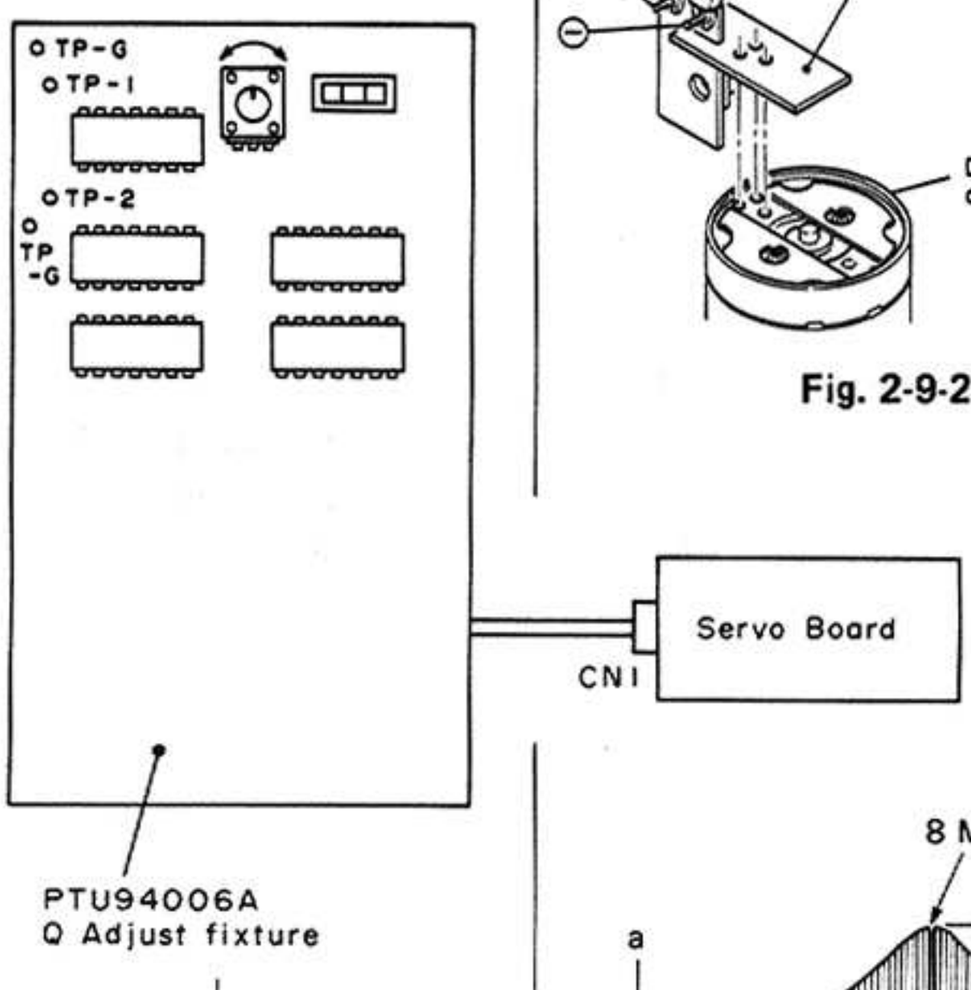


Fig. 2-9-1

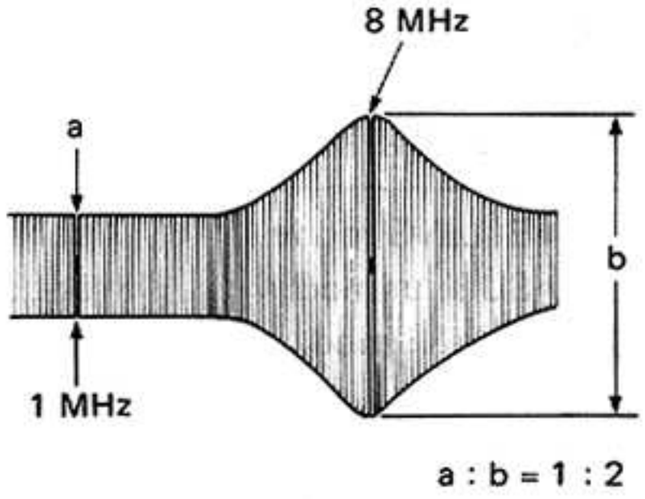


Fig. 2-9-3

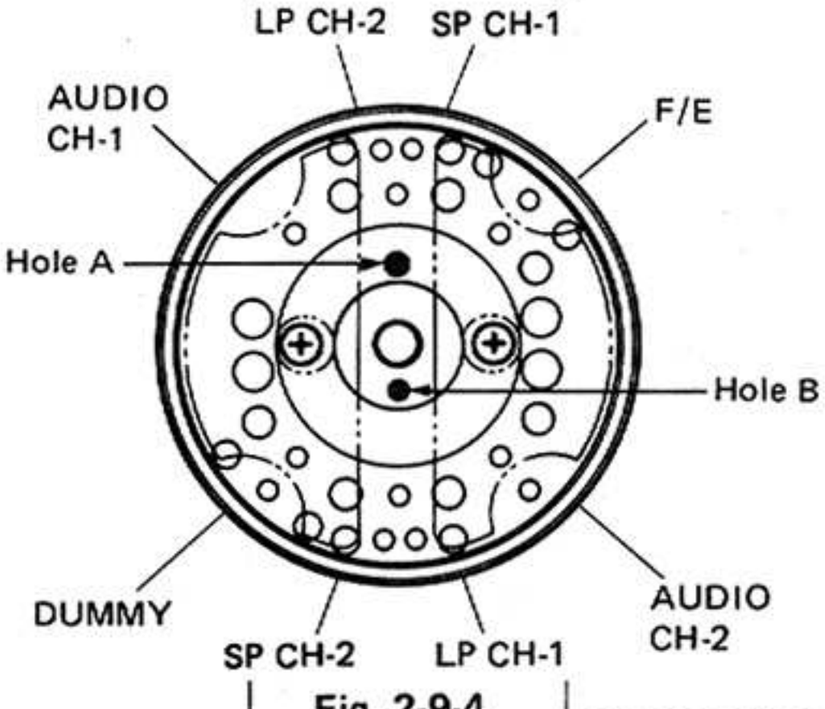
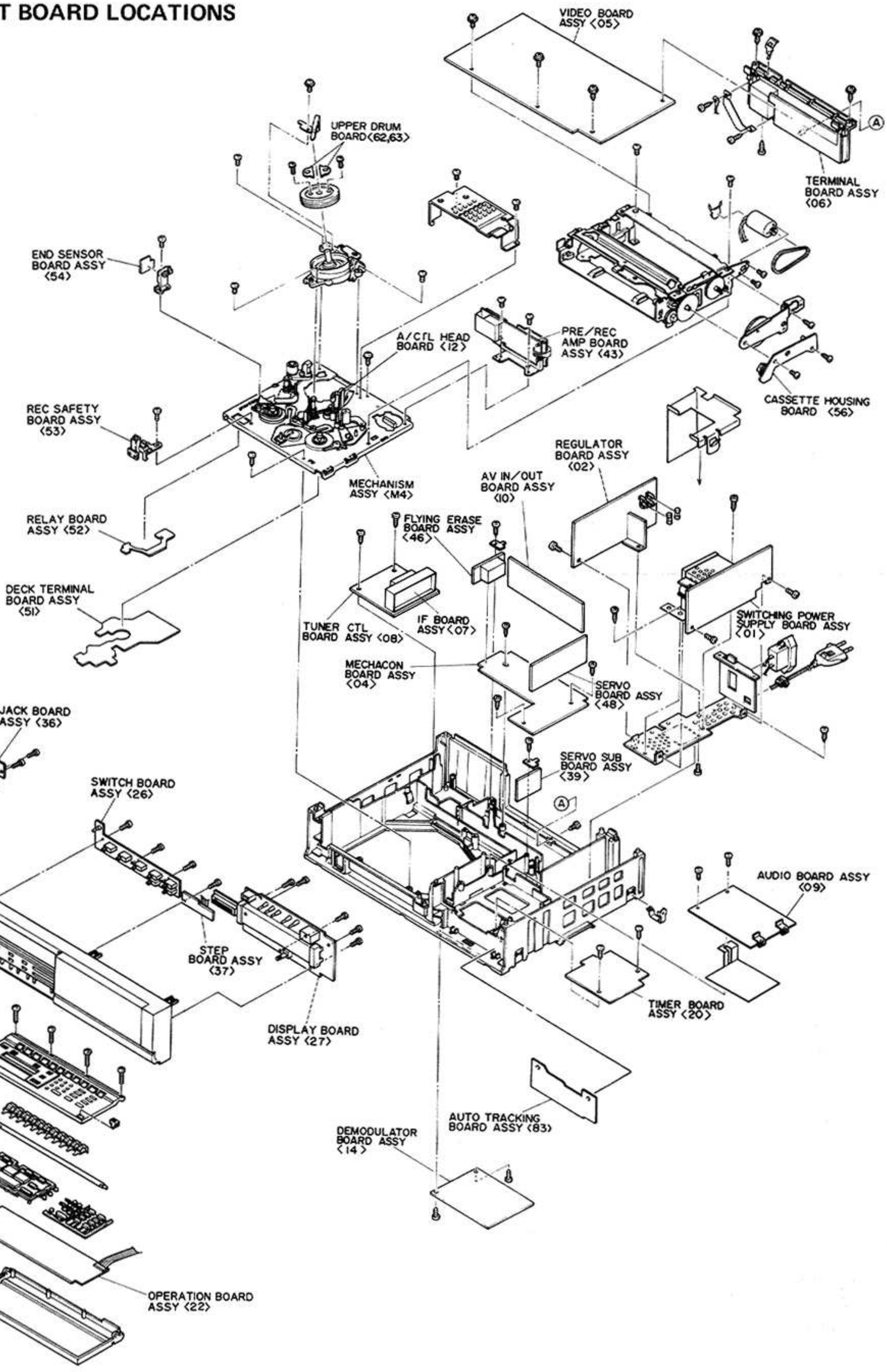


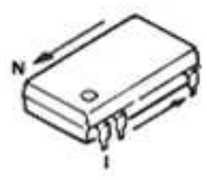
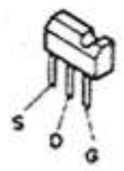
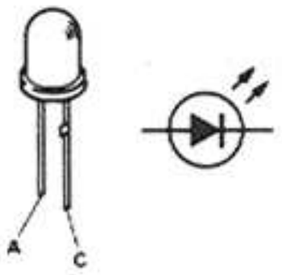
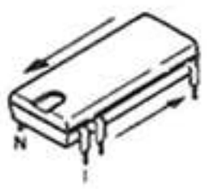
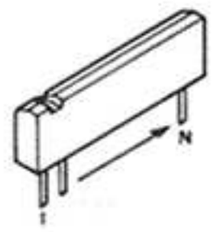
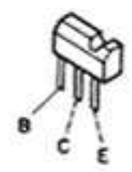
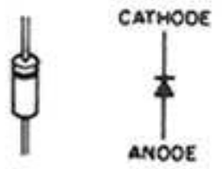
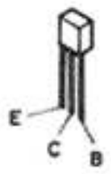
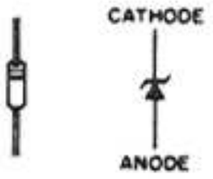
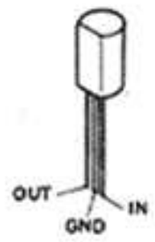
Fig. 2-9-4

SECTION 3
CHARTS AND DIAGRAMS

3.1 CIRCUIT BOARD LOCATIONS


VIDEO BOARD ASSY (05)
UPPER DRUM BOARD (62,63)
TERMINAL BOARD ASSY (06)
END SENSOR BOARD ASSY (54)
A/CTL HEAD BOARD (12)
PRE/REC AMP BOARD ASSY (43)
CASSETTE HOUSING BOARD (56)
REC SAFETY BOARD ASSY (53)
MECHANISM ASSY (M4)
REGULATOR BOARD ASSY (02)
AV IN/OUT BOARD ASSY (10)
RELAY BOARD ASSY (52)
FLYING ERASE BOARD ASSY (46)
DECK TERMINAL BOARD ASSY (51)
TUNER CTL BOARD ASSY (08)
IF BOARD ASSY (07)
SWITCHING POWER SUPPLY BOARD ASSY (01)
MECHACON BOARD ASSY (04)
SERVO BOARD ASSY (48)
JACK BOARD ASSY (36)
SERVO SUB BOARD ASSY (39)
SWITCH BOARD ASSY (26)
AUDIO BOARD ASSY (09)
STEP BOARD ASSY (37)
TIMER BOARD ASSY (20)
DISPLAY BOARD ASSY (27)
AUTO TRACKING BOARD ASSY (83)
DEMODULATOR BOARD ASSY (14)
OPERATION BOARD ASSY (22)

3.2 MAIN TYPES OF ACTIVE AND PACKAGE CIRCUITS

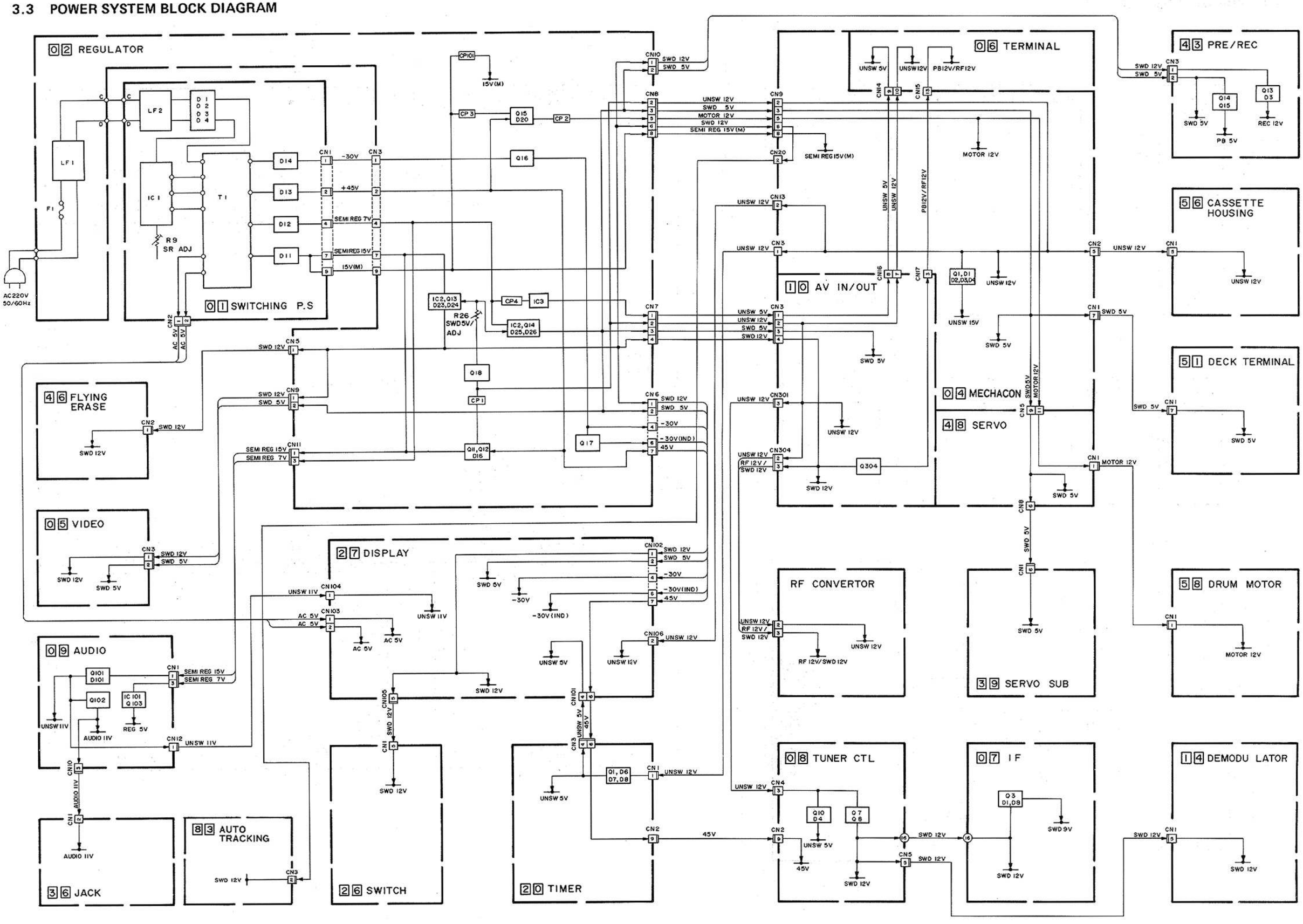
	Integrated Circuit		Transistor		Diode
	A	B	C	D	E
1					
2					
3					
4					
5					

NAME		L
IC		
A	AN6041	3A
B	BA10324	2A
	BA716LS	2B
	BU3791	2A
H	HZ118070	1A
	HD49722NT	1A
M	MC7805ACT	5A
	MSC1148BRS	2A
	MSM16811RS	1A
	M50445-398SP	1B
	M50938-625SP	2A
	M51288SP	1A
	M52055P	2A
N	NJM2233AD	1A
	NJM2234D	1A
	NJM2234S	3B
	NJM2243S	3B
P	PB20167A-01	4A
	PB20285A	4A
	PB20286A-01	4A
	PB20287A-02	4A
	PB20289A-02	4A
	PB20290A-02	4A
	PB20291A	4A
	PB20298A	4A

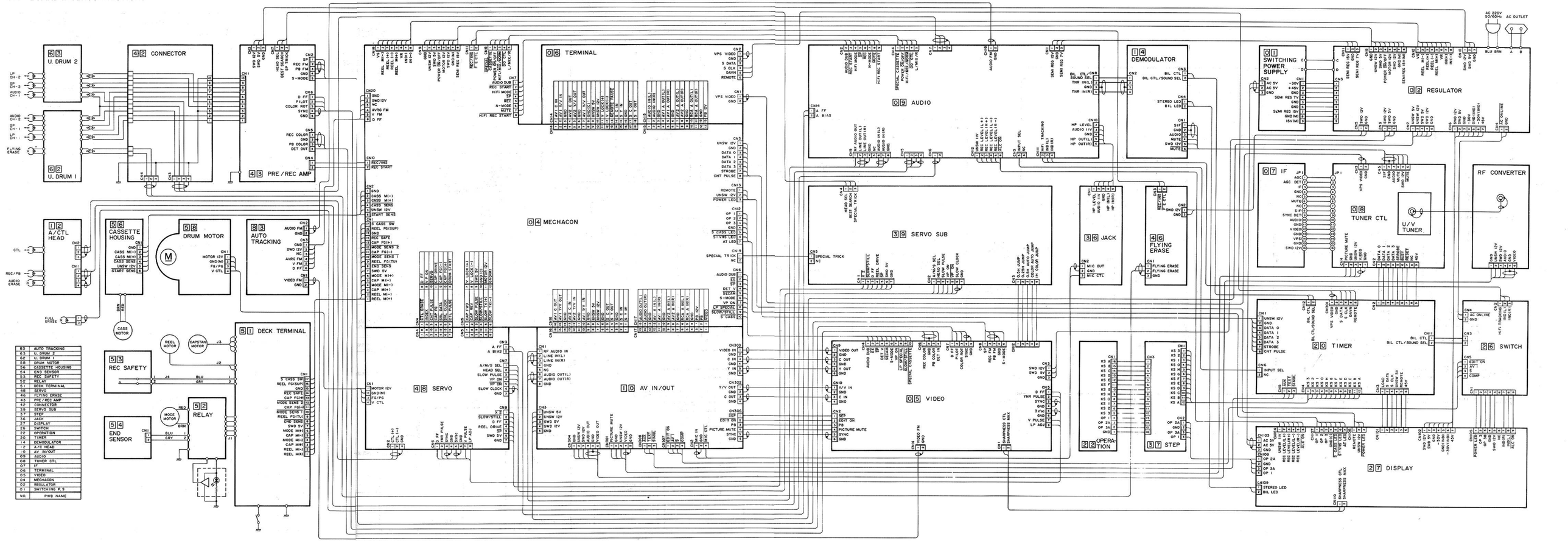
NAME		L
S	SDA5642	2A
	STR-D1706	5A
	S-8053HNB	4B
T	TA8405S	3B
	TA8609P	1B
	TA8733F	5B
	TC4052BP	1B
	TC74HC04AP	1A
	TC74HC4066P	1B
U	UPD75216ACW-188	1B
V	VC2063S	2A
TRANSISTOR		
DTC	DTC124EK	1C
P	PN268R-NC	2D
U	UN4319VI	3C
2SA	2SA1036K	1C
2SC	2SC1740	3C
	2SC2647	2C
	2SC3311A	3C
	2SC3313CTA	3C

NAME		L
2SD	2SD639R	2C
2SK	2SK658	1D
DIODE		
H	HZ12A2	3E
	HZ6BITE	3E
M	MTZJ4.7C	3E
O	OA90UF	2E
R	RD16ES-T1B2	3E
	RD20ES-T1B2	3E
S	SLR-55VC3F	1E
1	10E6-F2	2E

3.3 POWER SYSTEM BLOCK DIAGRAM

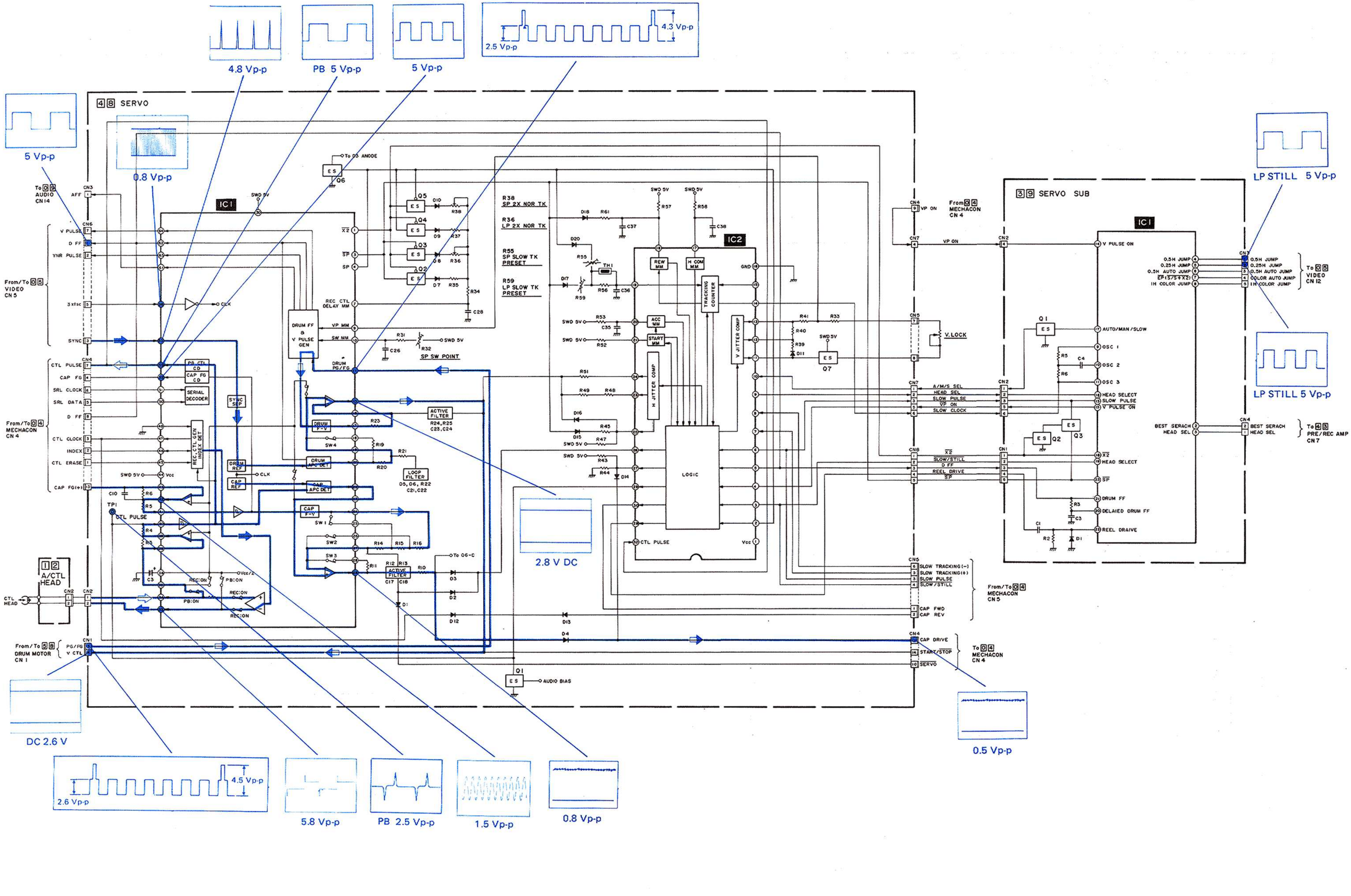


3.4 BOARD INTERCONNECTIONS

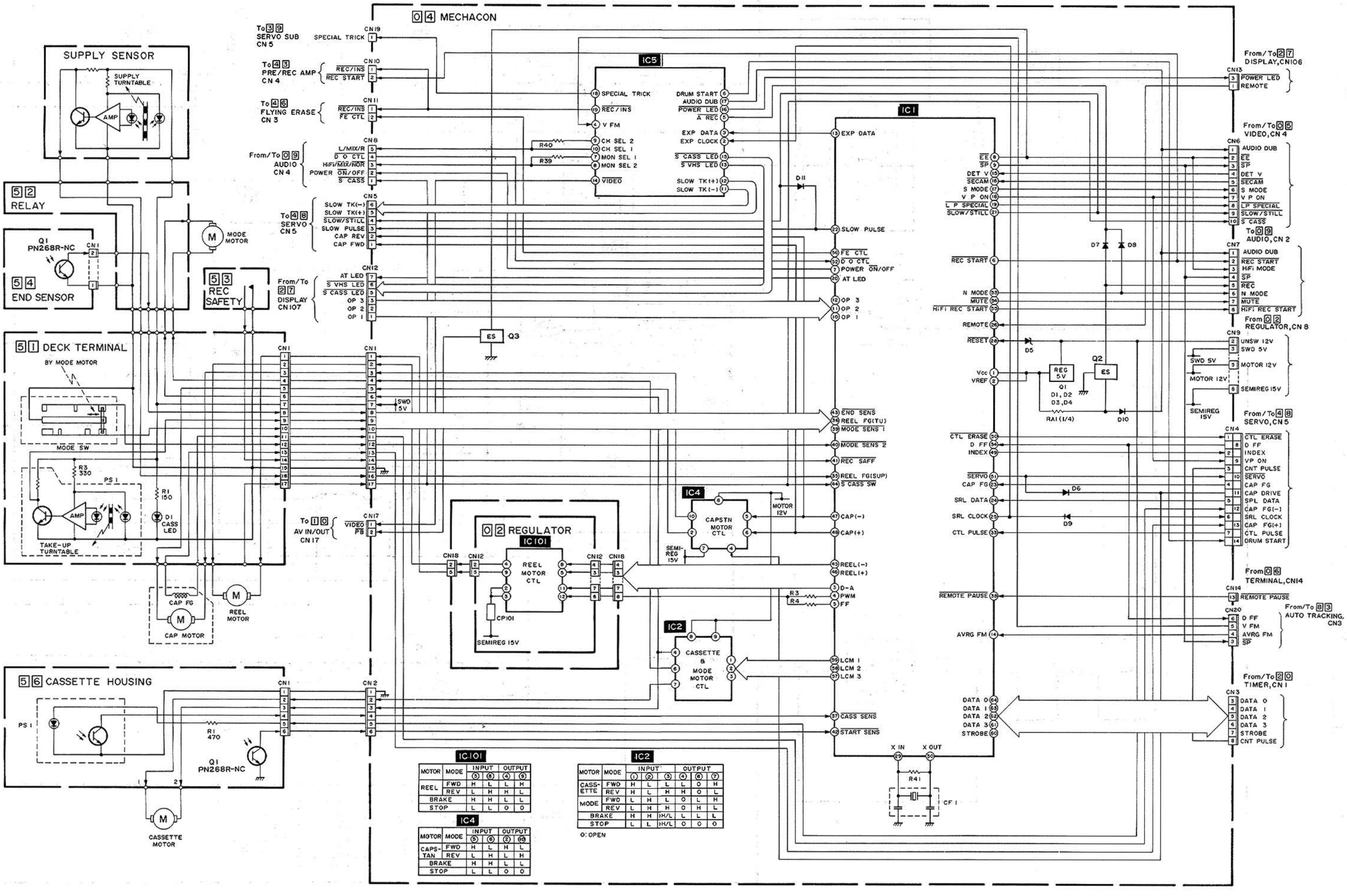


NO.	PWB NAME
63	AUTO TRACKING
62	U. DRUM 2
62	U. DRUM 1
58	DRUM MOTOR
56	CASSETTE HOUSING
54	END SENSOR
53	REC SAFETY
52	RELAY
51	DECK TERMINAL
48	SERVO
46	FLYING ERASE
43	PRE / REC AMP
42	CONNECTOR
39	SERVO SUB
37	STEP
36	JACK
27	DISPLAY
26	SWITCH
22	OPERATION
20	TIMER
14	DEMODULATOR
12	A/C HEAD
10	AV IN/OUT
09	AUDIO
08	TUNER CTL
07	IF
06	TERMINAL
05	VIDEO
04	MECHACON
02	REGULATOR
01	SWITCHING P.S

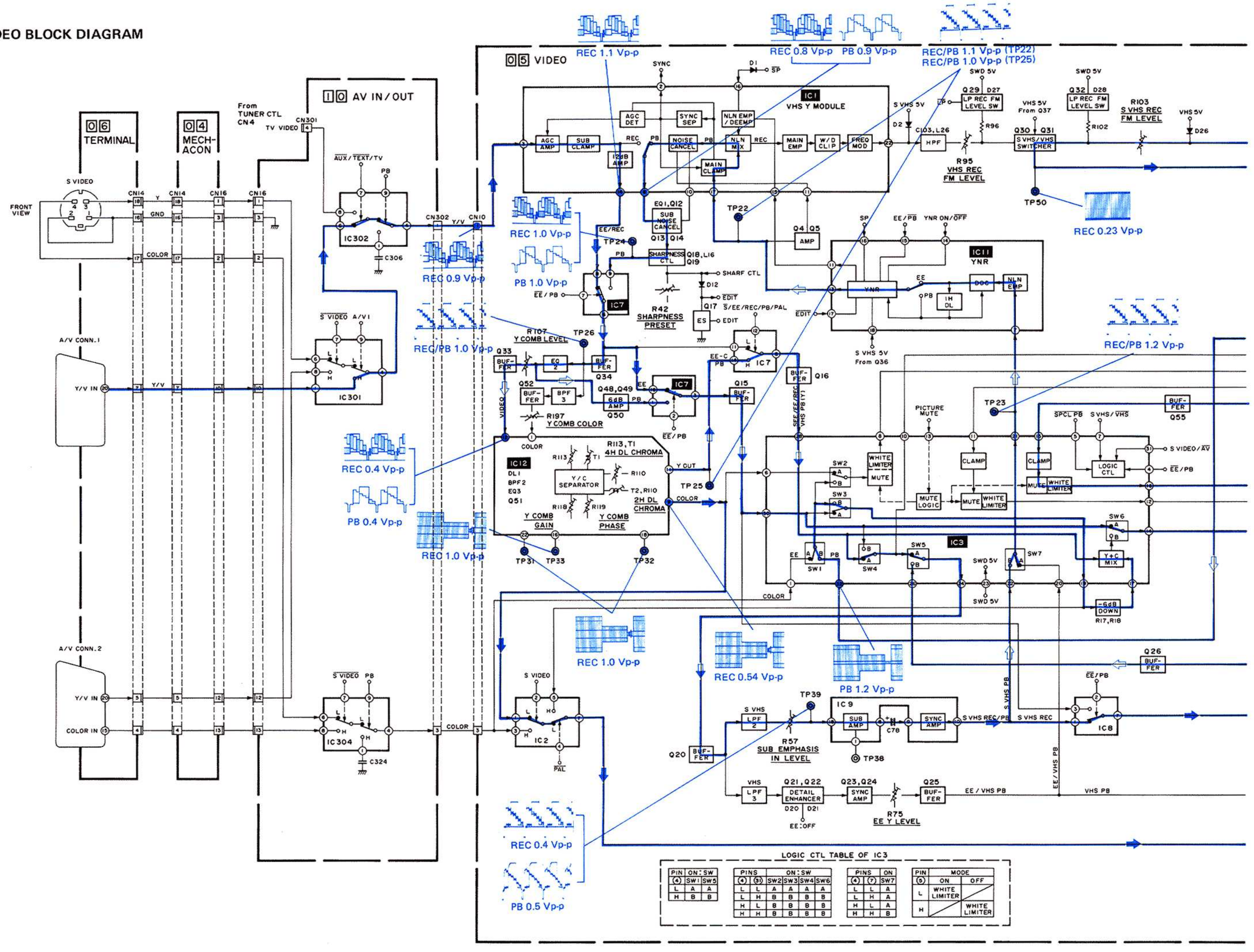
3.5 SERVO BLOCK DIAGRAM



3.6 MECHACON BLOCK DIAGRAM



3.7 VIDEO BLOCK DIAGRAM



10 AV IN/OUT

REC/PB 0.6 Vp-p
REC/PB 1.0 Vp-p
REC/PB 1.0 Vp-p
REC/PB 1.0 Vp-p
REC/PB 1.0 Vp-p
PB 1.5 Vp-p
PB 50 mVp-p
PB 0.45 Vp-p
PB 0.15 Vp-p
REC/PB 40 m Vp-p
REC/PB 0.1 Vp-p
REC 0.25 Vp-p
PB 0.18 Vp-p
PB 0.23 Vp-p
REC 1.1 Vp-p
PB 0.5 Vp-p
PB 0.45 Vp-p
REC 0.4 Vp-p
REC/PB 0.34 Vp-p

TP310 TP110 TP10 TP307 TP305 TP329 TP36 TP37 TP6

CN9 CN303 CN16 CN14 CN304 CN6 CN8 CN14

BUF-FER Q302 Q303 Q301 Q306 Q8 Q9 Q10 Q11 Q318 Q326 Q308 Q304 Q332

D329 COMP

S-COLOR AVI-COLOR S-Y AVI-Y/V VIDEO COLOR Y

S VIDEO A/V CONN_1

04 MECHACON 06 TERMINAL

To RF CONV

From 43 PRE/REC, CN5

PB PROCESSED COLOR

To 83 AUTO TRACKING, CN1

VIDEO FM

REC FM PB FM

From/To 43 PRE/REC, CN2

To 43 PRE/REC, CN5

REC PROCESSED COLOR

PB COLOR

C314 R315 Q307 VHS:ON

E PHASE SPLITTER B C Q305

L306 C310 FMA TRAP L305 C309 H TRAP

Q403 ES PAL:ON

IC4 IC5 IC6 0.5H JUMP IC15 IC14 BAL MOD IC303 IC10 S VHS Y MODULE IC302 COLOR JUMP IC401 SECAM DET IC301

LPF1 BPF LPF 0.5H DL

PB/PAL 0.25H JUMP 3 fsc 0.5H JUMP

R27 0.25H DL VIDEO LEVEL

R91 VHS PB Y LEVEL

R92 S VHS PB Y LEVEL

R163 0.25H DELAYED VIDEO

Q4,DL3 0.25H DL Q42,Q43

Q39,Q40 AMP

Q45 BUF-FER Q46 Q47 X'TAL OSC X101 14.3MHz C150

Q53 S VHS 5V EDIT R84 R85 L24,C102 LPF

Q28 ES S VHS 5V

DEEMPHASIS / PICTURE CTL FREQ DEMOD DOUBLE LIMITER DOC DET MAIN CLAMP MAIN EMP W/D CLIP FREQ MOD SYNC SEP SYNC

IC 302 SYNC SEP SKEW JUMP DET 0.5H JUMP To SERVO

AUTO COL/JUMP STOP COL JUMP CTL COLOR INVERTED

Q315 S VHS SUB CARRIER PHASE SHIFT Q316 Q317 Q318 Q319 VHS 5V S VHS fsc From IC301-15

SWD 5V REC/PB REC ATT SECAM PAL PAL/SECAM DET PAL/SECAM

R348 R349 ATT DL301 2H DL Q301 BUF-FER BPF 301

PB AMP REC ACC AMP MAIN CONV REC COL KILLER REC LPF PB COL KILLER

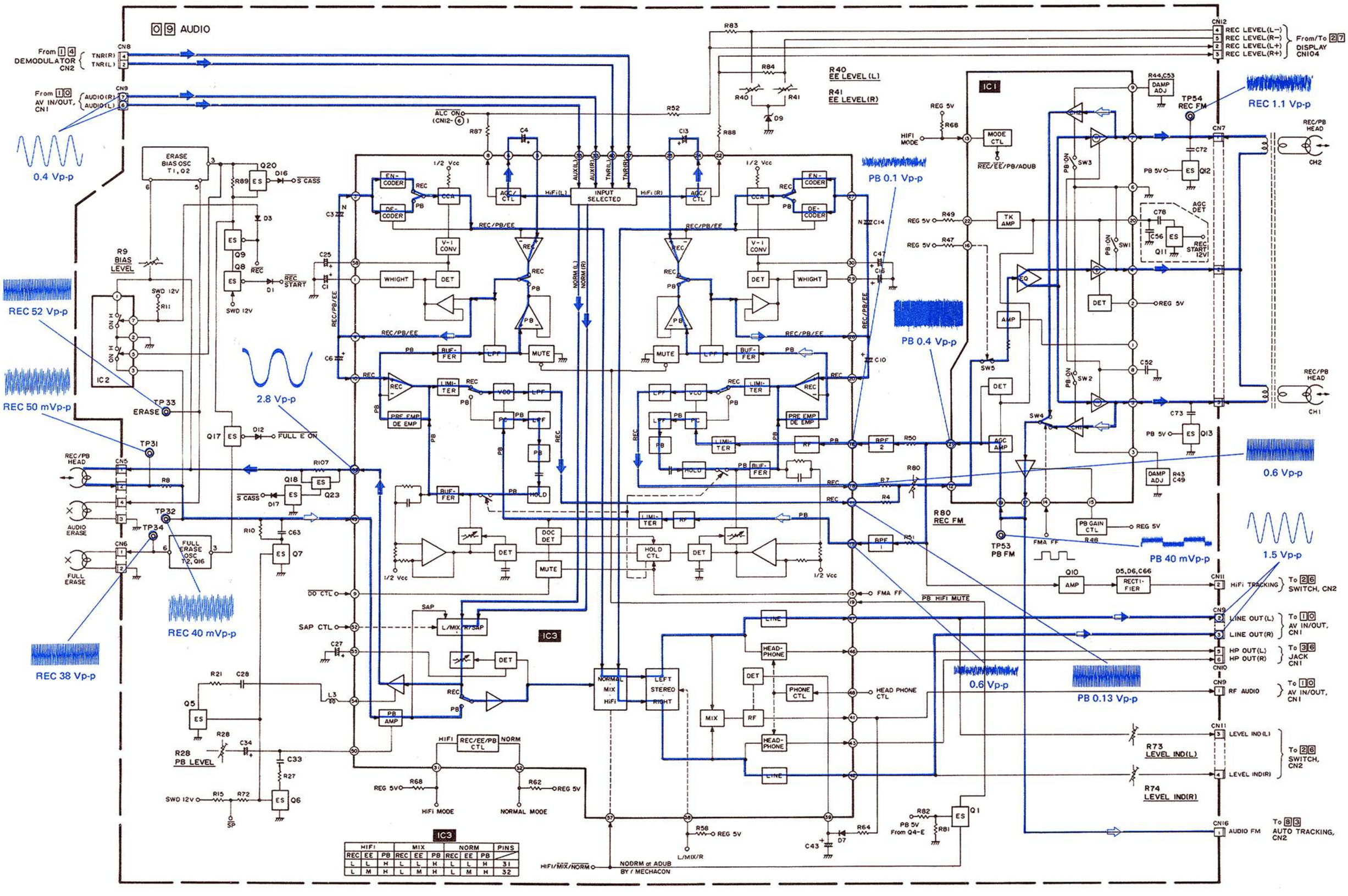
S VHS/VHS DET 4PHASE SHIFT BPF Q311 BPF302 SUB CONV 1/2 CD 1/4 CD 321 fH VCO SYNC

3 fsc fsc X301 S VHS/VHS To PRE/REC

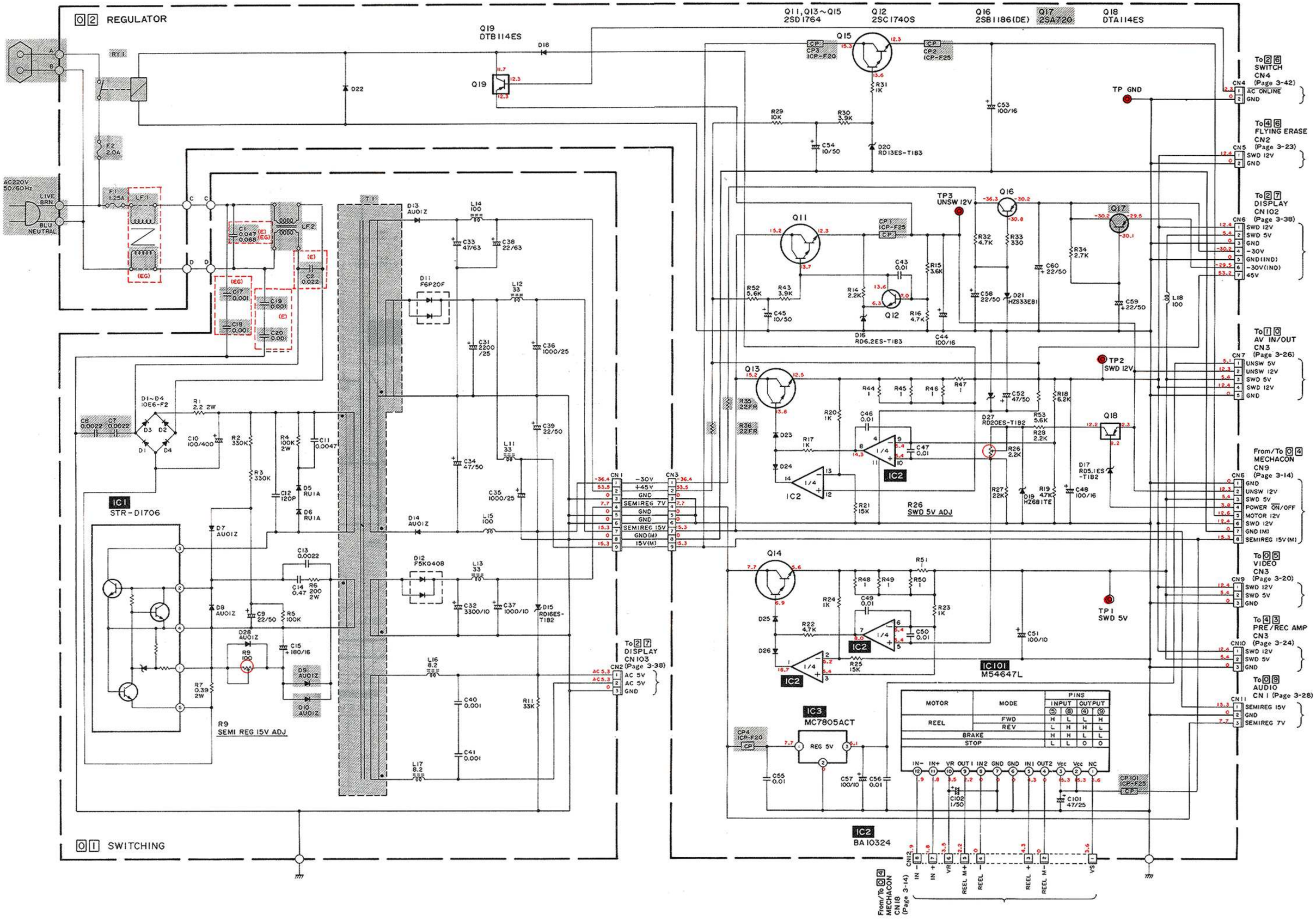
R355 SP REC COLOR R353 LP REC COLOR R354 SP/LP Q320 ES S VHS 5V

S VHS / VHS COLOR PROCESS

3.9 AUDIO BLOCK DIAGRAM

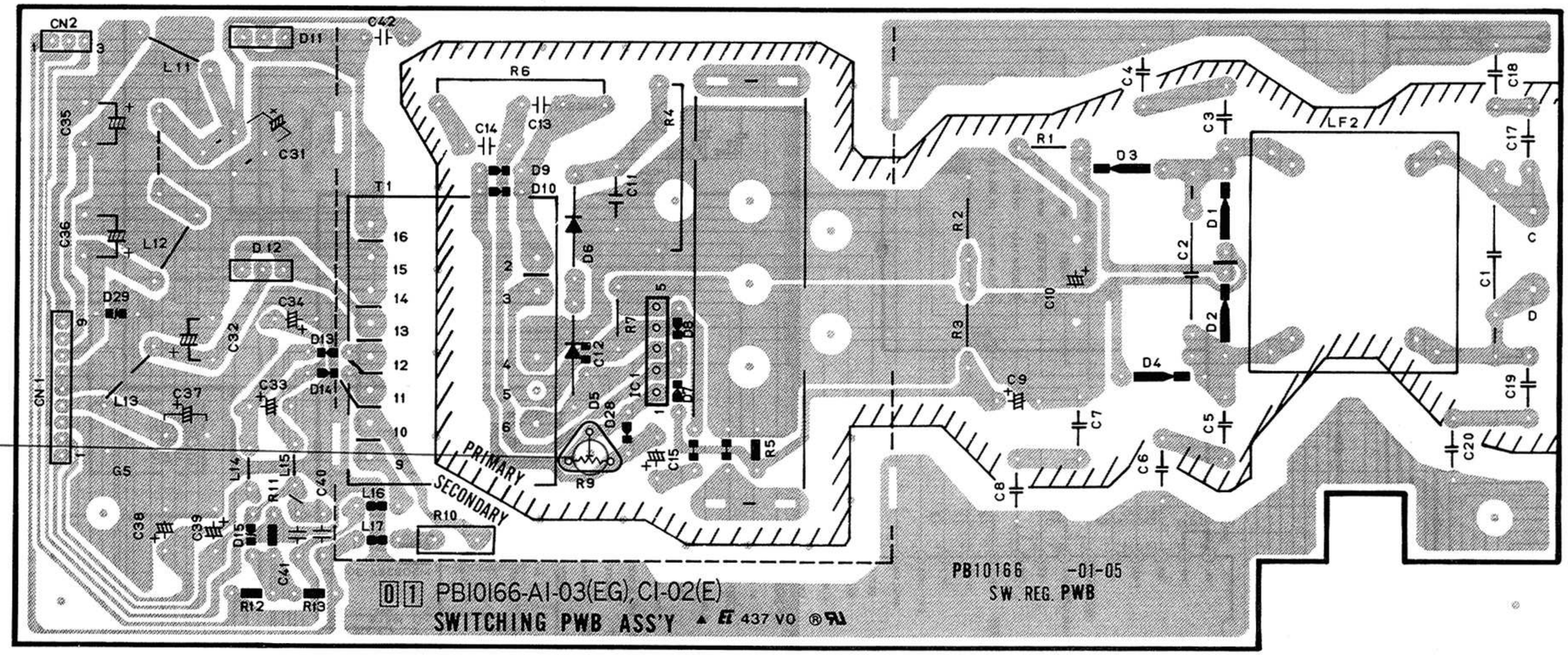


3.10 SWITCHING POWER SUPPLY AND REGULATOR SCHEMATIC DIAGRAMS

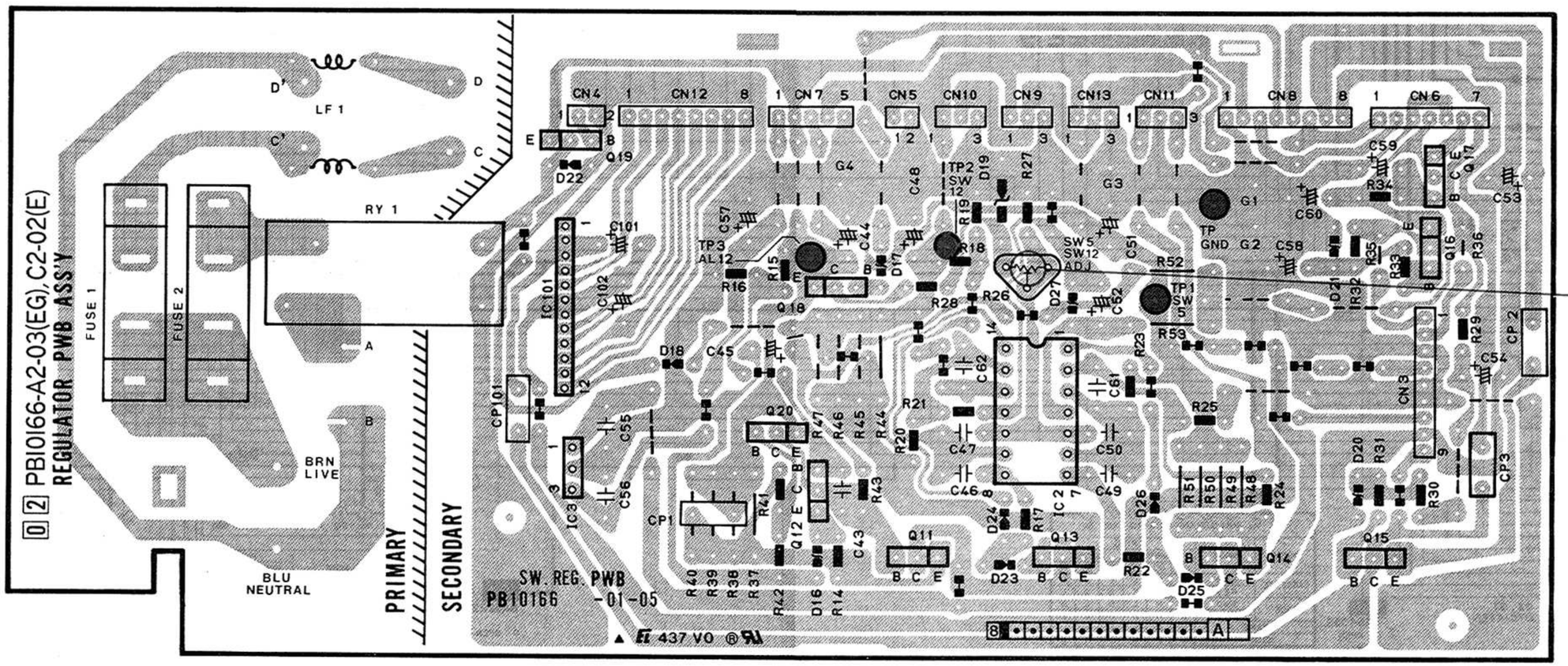


3.11 SWITCHING POWER SUPPLY AND REGULATOR CIRCUIT BOARDS

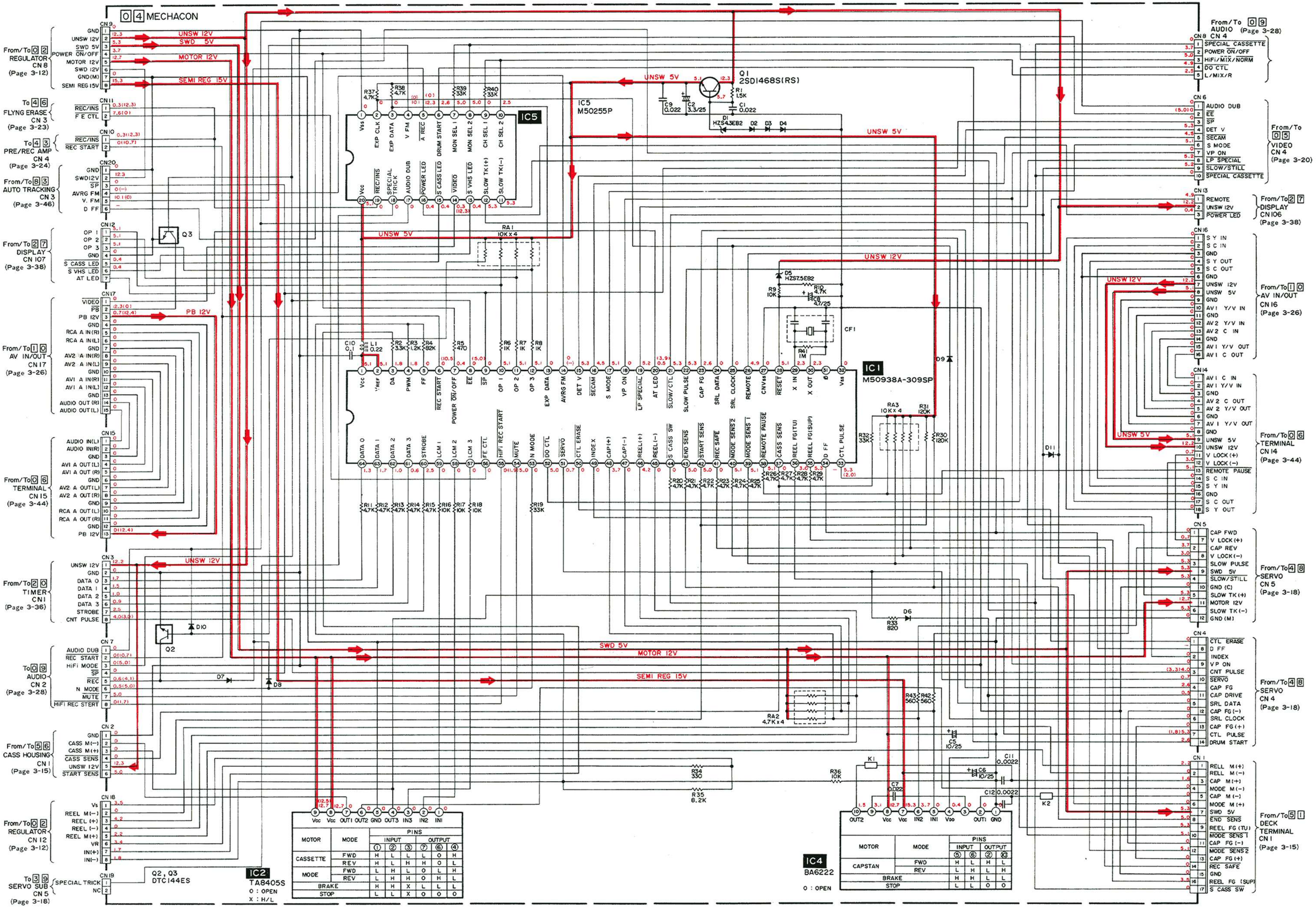
– SWITCHING –



– REGULATOR –



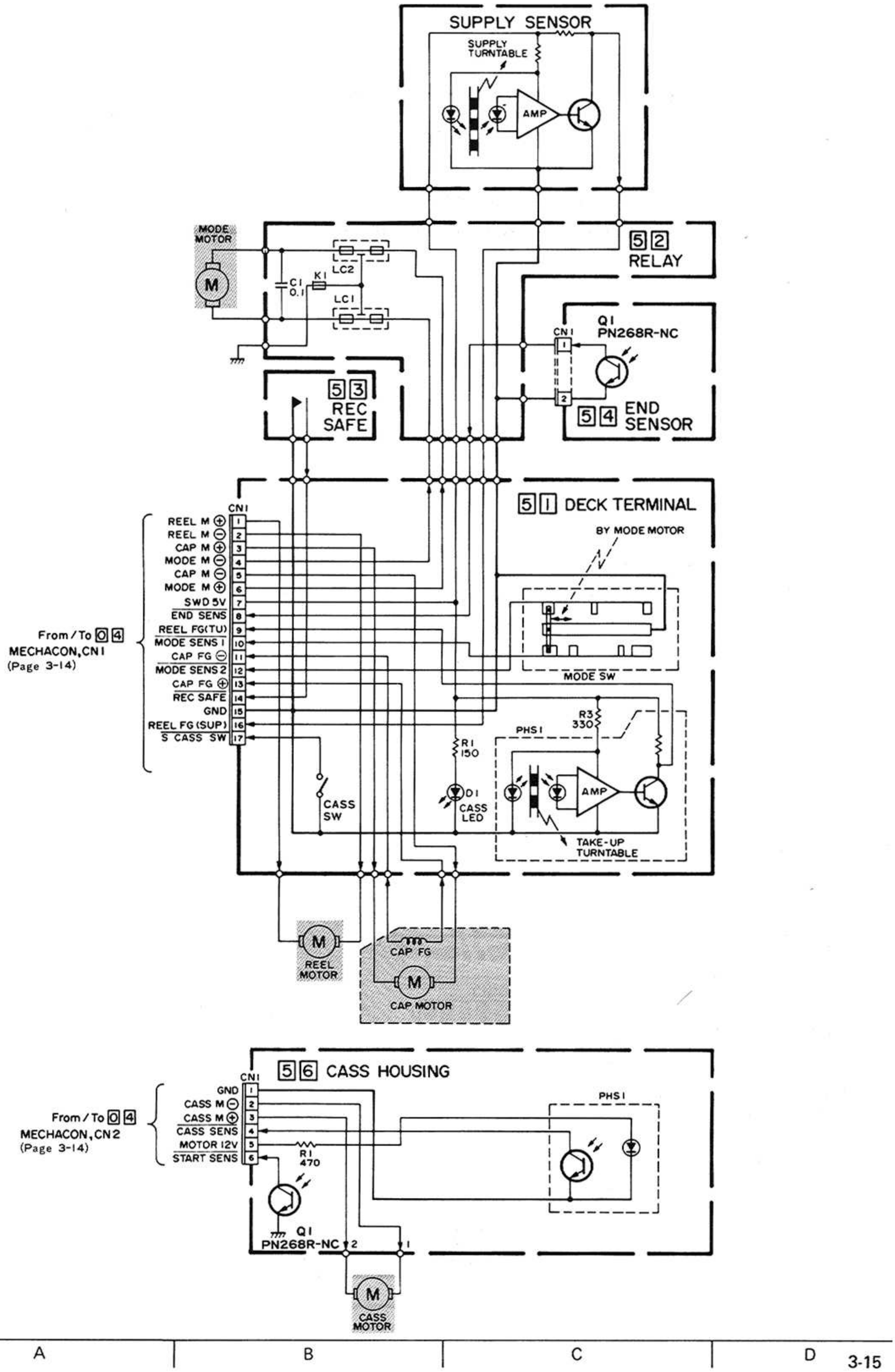
3.12 MECHANISM CONTROL SCHEMATIC DIAGRAM


04 MECHACON
UNSW 12V
SWD 5V
MOTOR 12V
SEMI REG 15V
PB 12V
UNSW 5V
SWD 5V
MOTOR 12V
SEMI REG 15V
PB 12V
IC5
M50255P
IC1
M50938A-309SP
Q1
2SD1468S(RS)
Q2, Q3
DTC144ES
IC2
TA8405S
0 : OPEN
X : H/L
IC4
BA6222
0 : OPEN
From/To 02 REGULATOR CN 8 (Page 3-12)
To 46 FLYNG ERASE CN 3 (Page 3-23)
To 43 PRE/REC AMP CN 4 (Page 3-24)
From/To 83 AUTO TRACKING CN 3 (Page 3-46)
From/To 27 DISPLAY CN 107 (Page 3-38)
From/To 10 AV IN/OUT CN 17 (Page 3-26)
From/To 06 TERMINAL CN 15 (Page 3-44)
From/To 20 TIMER CN 1 (Page 3-36)
To 09 AUDIO CN 2 (Page 3-28)
From/To 56 CASS HOUSING CN 1 (Page 3-15)
From/To 02 REGULATOR CN 12 (Page 3-12)
To 39 SERVO SUB CN 5 (Page 3-18)
From/To 09 AUDIO (Page 3-28)
From/To 05 VIDEO CN 4 (Page 3-20)
From/To 27 DISPLAY CN 106 (Page 3-38)
From/To 10 AV IN/OUT CN 16 (Page 3-26)
From/To 06 TERMINAL CN 14 (Page 3-44)
From/To 48 SERVO CN 5 (Page 3-18)
From/To 48 SERVO CN 4 (Page 3-18)
From/To 51 DECK TERMINAL CN 1 (Page 3-15)

MOTOR	MODE	PINS INPUT ①	②	③	OUTPUT ⑦	⑥	④
CASSETTE	FWD	H	L	L	L	O	H
	REV	H	L	H	H	O	L
MODE	FWD	L	H	L	O	L	H
	REV	L	H	H	O	H	L
BRAKE		H	H	X	L	L	L
STOP		L	L	X	O	O	O

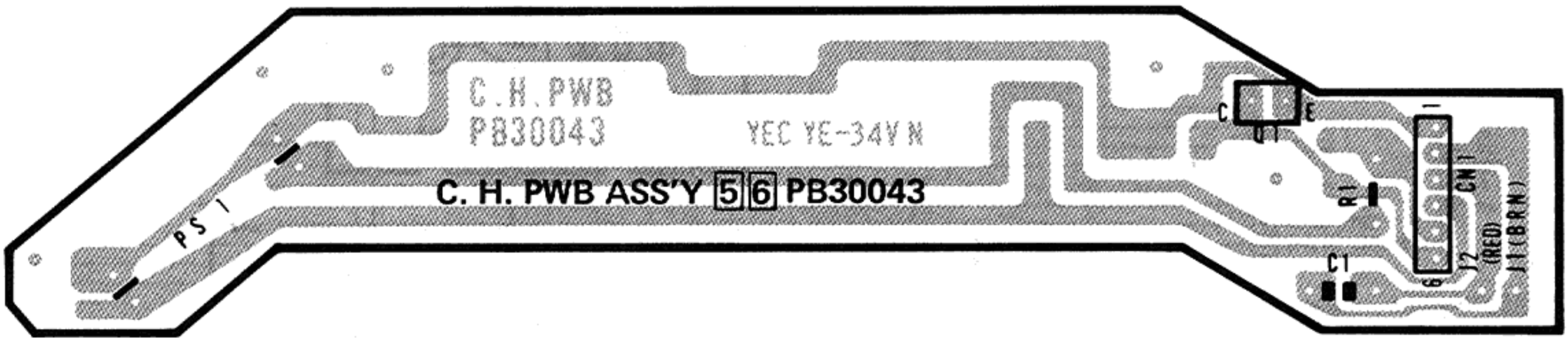
MOTOR	MODE	PINS INPUT ⑤	⑥	OUTPUT ②	⑩
CAPSTAN	FWD	H	L	H	L
	REV	L	H	L	H
BRAKE		H	H	L	L
STOP		L	L	O	O

3.13 DECK TERMINAL, CASSETTE HOUSING, RELAY, END SENSOR AND REC SAFETY SCHEMATIC DIAGRAMS

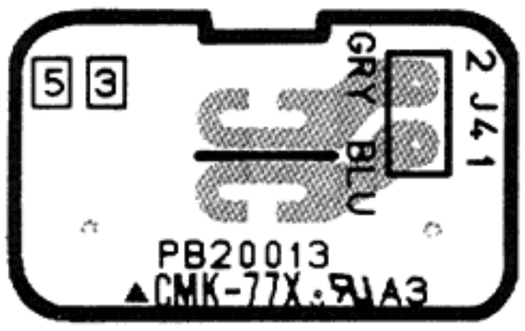


3.14 DECK TERMINAL, CASSETTE HOUSING, RELAY, END SENSOR AND REC SAFETY CIRCUIT BOARDS

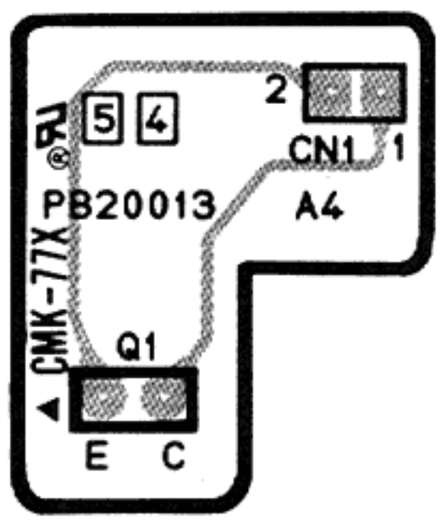
— CASSETTE HOUSING —



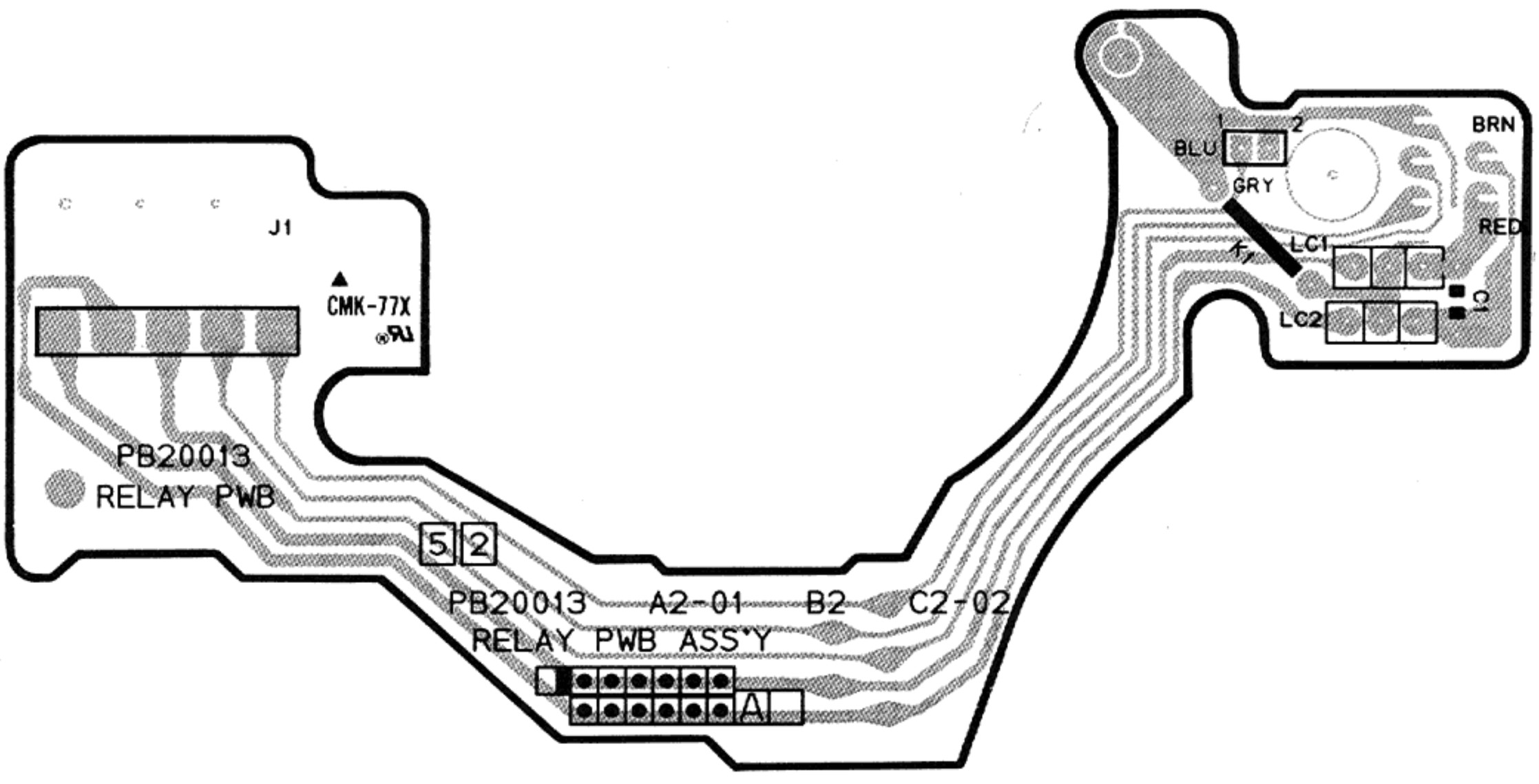
— REC SAFETY —



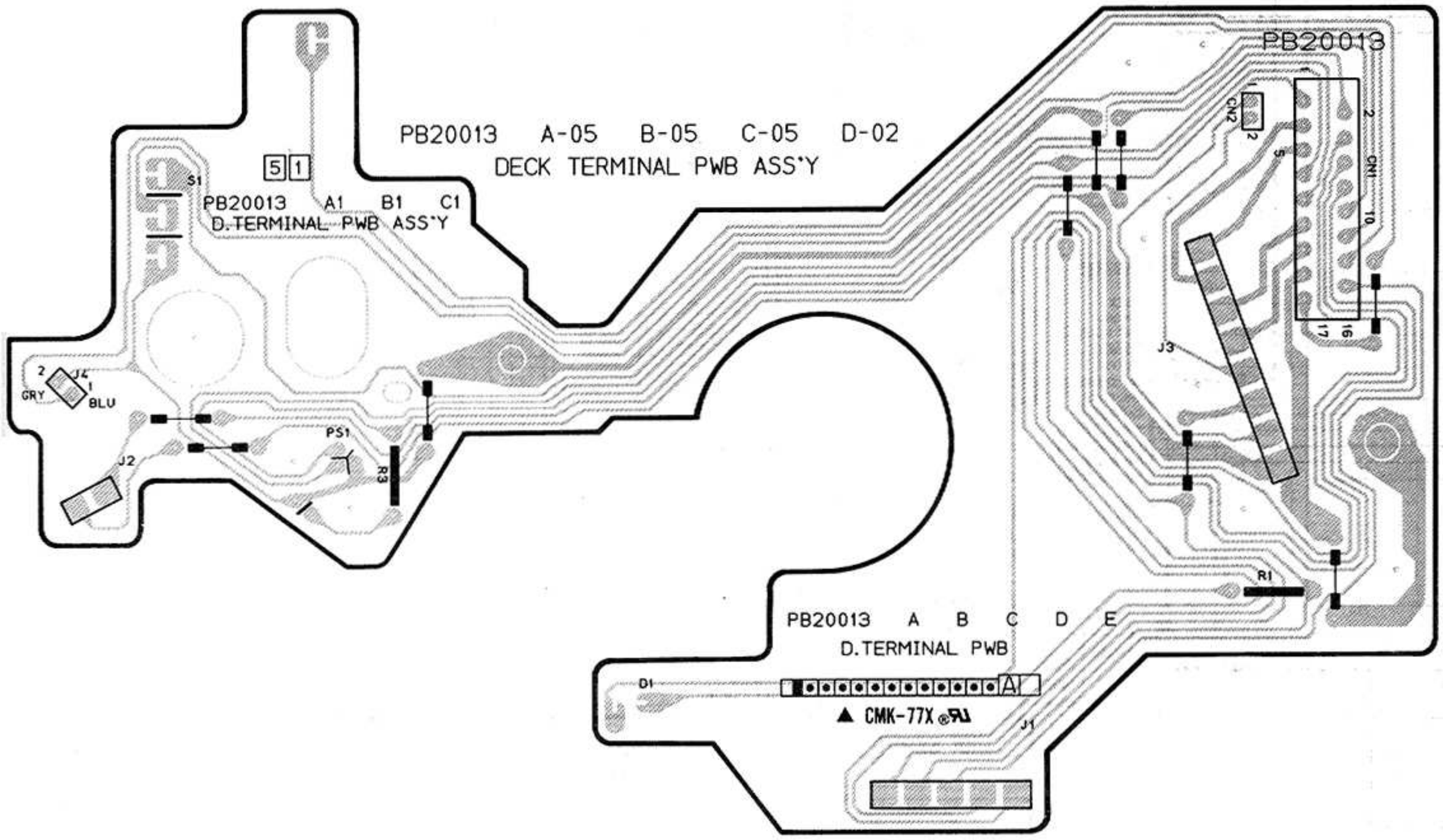
— END SENSOR —



— RELAY —

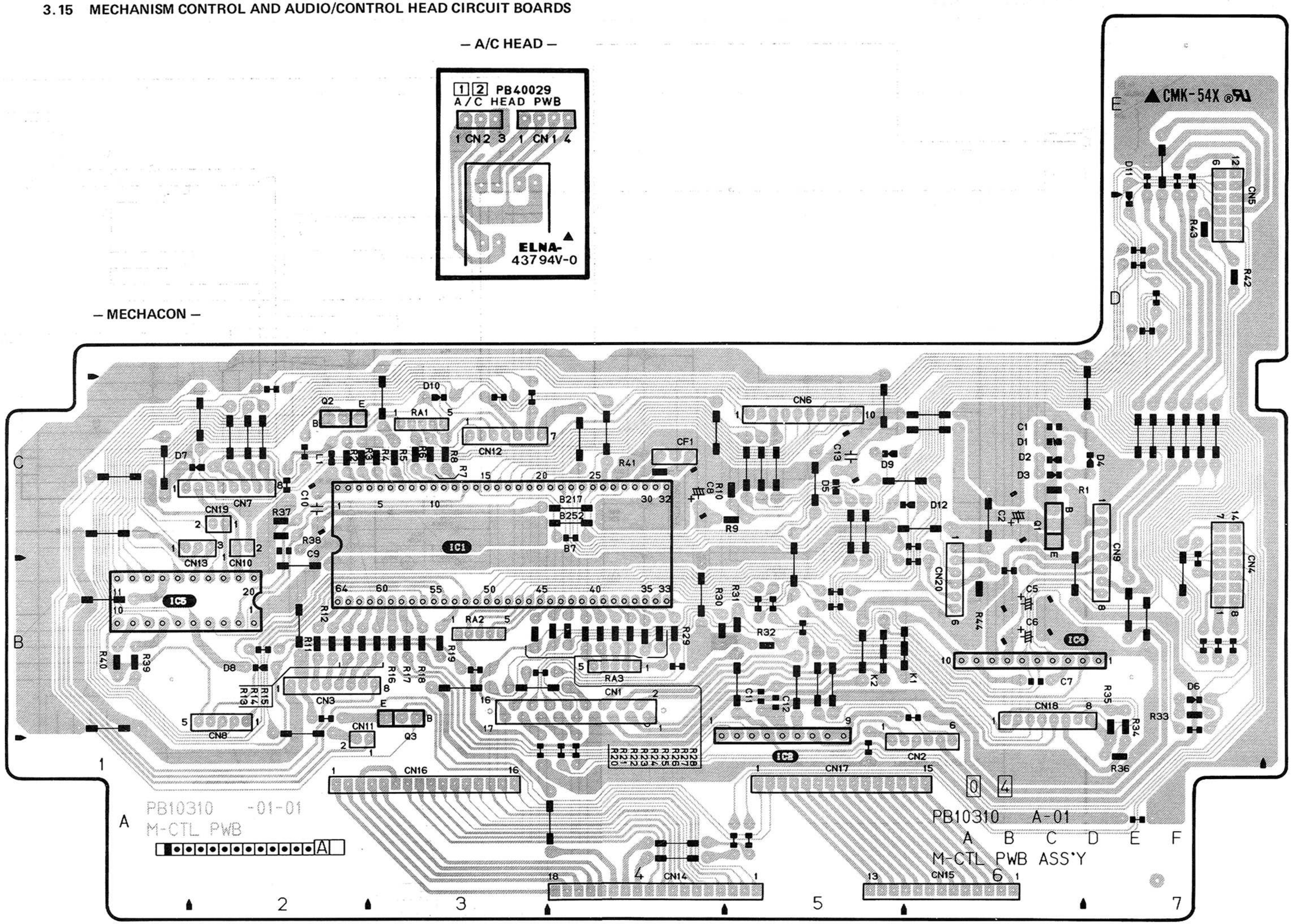


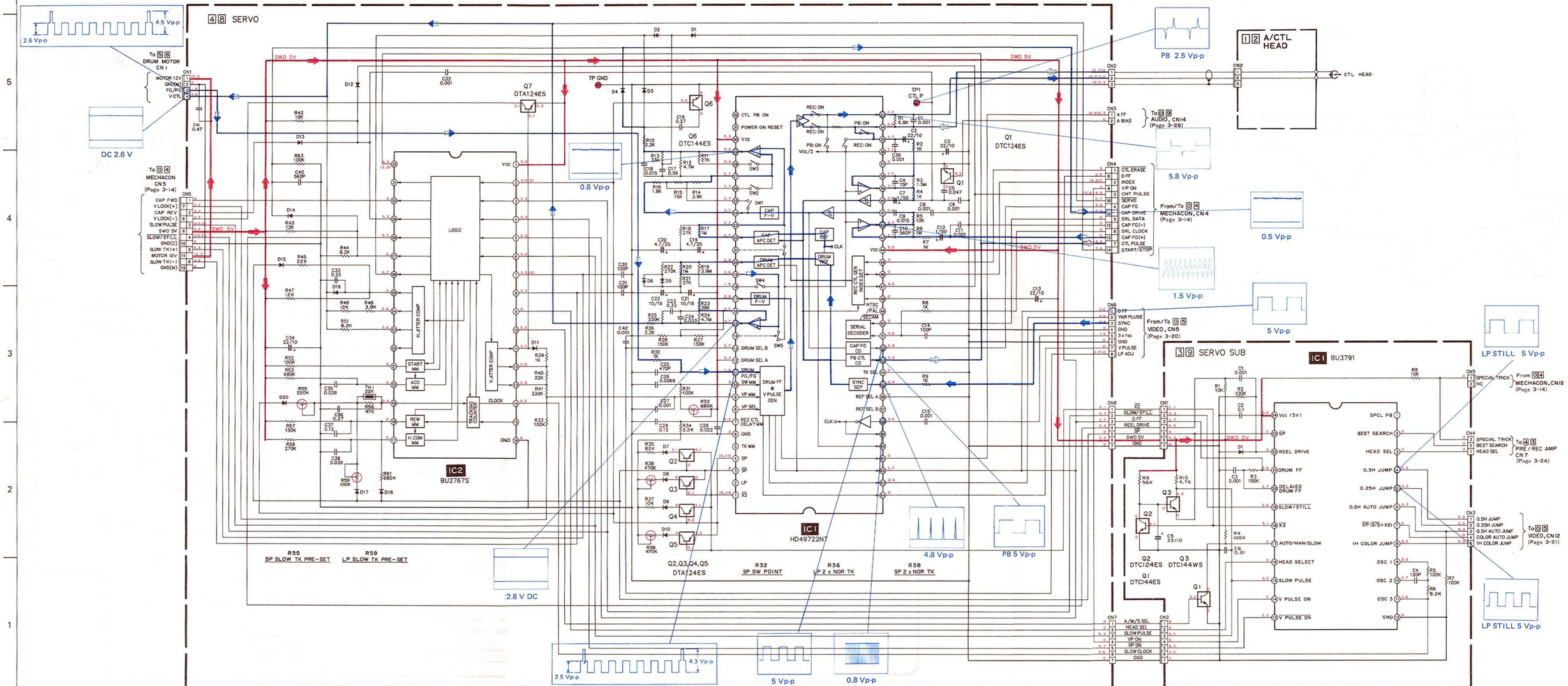
– DECK TERMINAL –



– A/C HEAD –

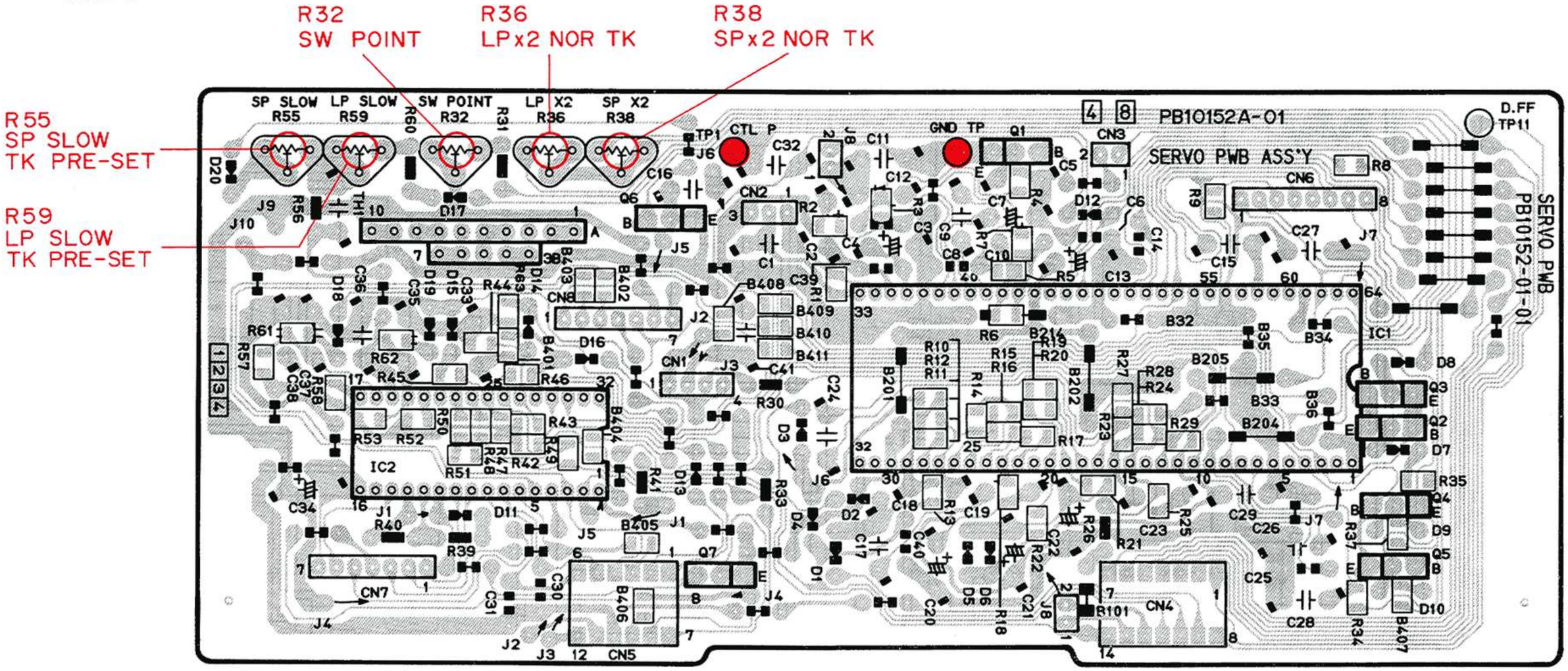
– MECHACON –



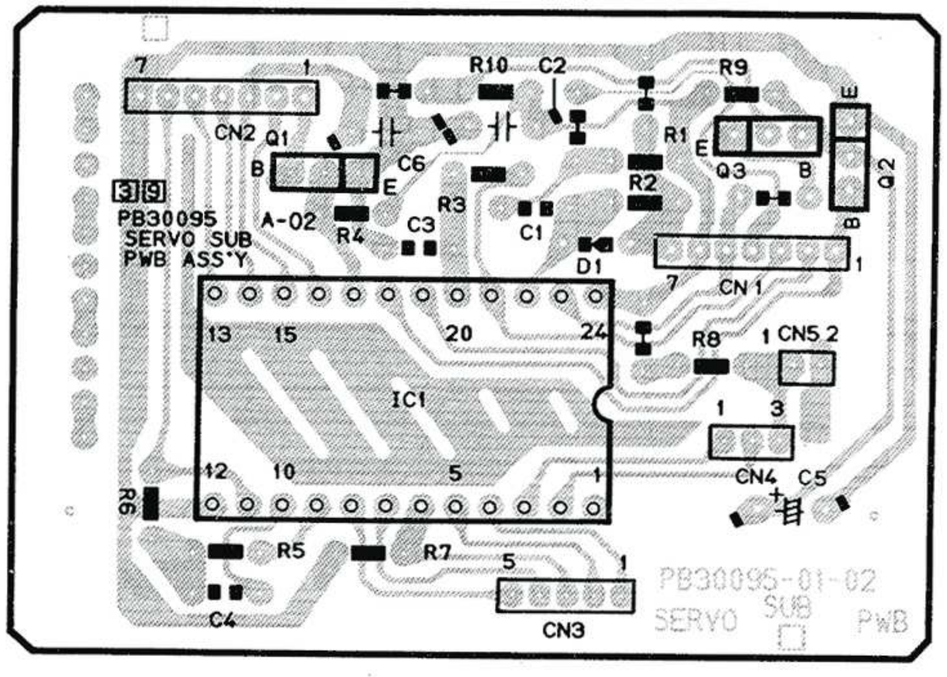

4 8 SERVO
3 9 SERVO SUB
1 2 A/C HEAD
IC1 HD49722NT
IC2 BU2767S
IC1 BU3791
Q1 DTC124ES
Q2,Q3,Q4,Q5 DTA124ES
Q6 DTC144ES
Q7 DTA124ES
Q2 DTC124ES Q3 DTC144WS Q1 DTC144ES
R55 SP SLOW TK PRE-SET
R59 LP SLOW TK PRE-SET
R32 SP SW POINT
R36 LP 2 x NOR TK
R38 SP 2 x NOR TK
4.5 Vp-p
2.6 Vp-p
DC 2.6 V
0.8 Vp-p
2.8 V DC
2.5 Vp-p
4.3 Vp-p
5 Vp-p
0.8 Vp-p
4.8 Vp-p
PB 5 Vp-p
PB 2.5 Vp-p
5.8 Vp-p
0.5 Vp-p
1.5 Vp-p
5 Vp-p
LP STILL 5 Vp-p
LP STILL 5 Vp-p
SWD 5V
TP GND
TP1 CTL P
CTL HEAD
To 5 8 DRUM MOTOR CN1
To 0 4 MECHACON CN5 (Page 3-14)
To 0 8 AUDIO, CN14 (Page 3-28)
From/To 0 4 MECHACON, CN4 (Page 3-14)
From/To 0 5 VIDEO, CN5 (Page 3-20)
From 0 4 MECHACON, CN9 (Page 3-14)
To 4 3 PRE / REC AMP CN7 (Page 3-24)
To 0 8 VIDEO, CN12 (Page 3-21)
LOGIC
H.JITTER COMP
V.JITTER COMP
TRACKING CONTROL
DRUM FF & V PULSE GEN
REC CTL GEN INSERT DET
SERIAL DECODER
SYNC SEP
CAP APC DET
DRUM APC DET
CAP F-V
DRUM F-V
START MM
ACC MM
REW MM
H.COM MM
CLOCK
GND

3.17 SERVO AND SERVO SUB CIRCUIT BOARDS

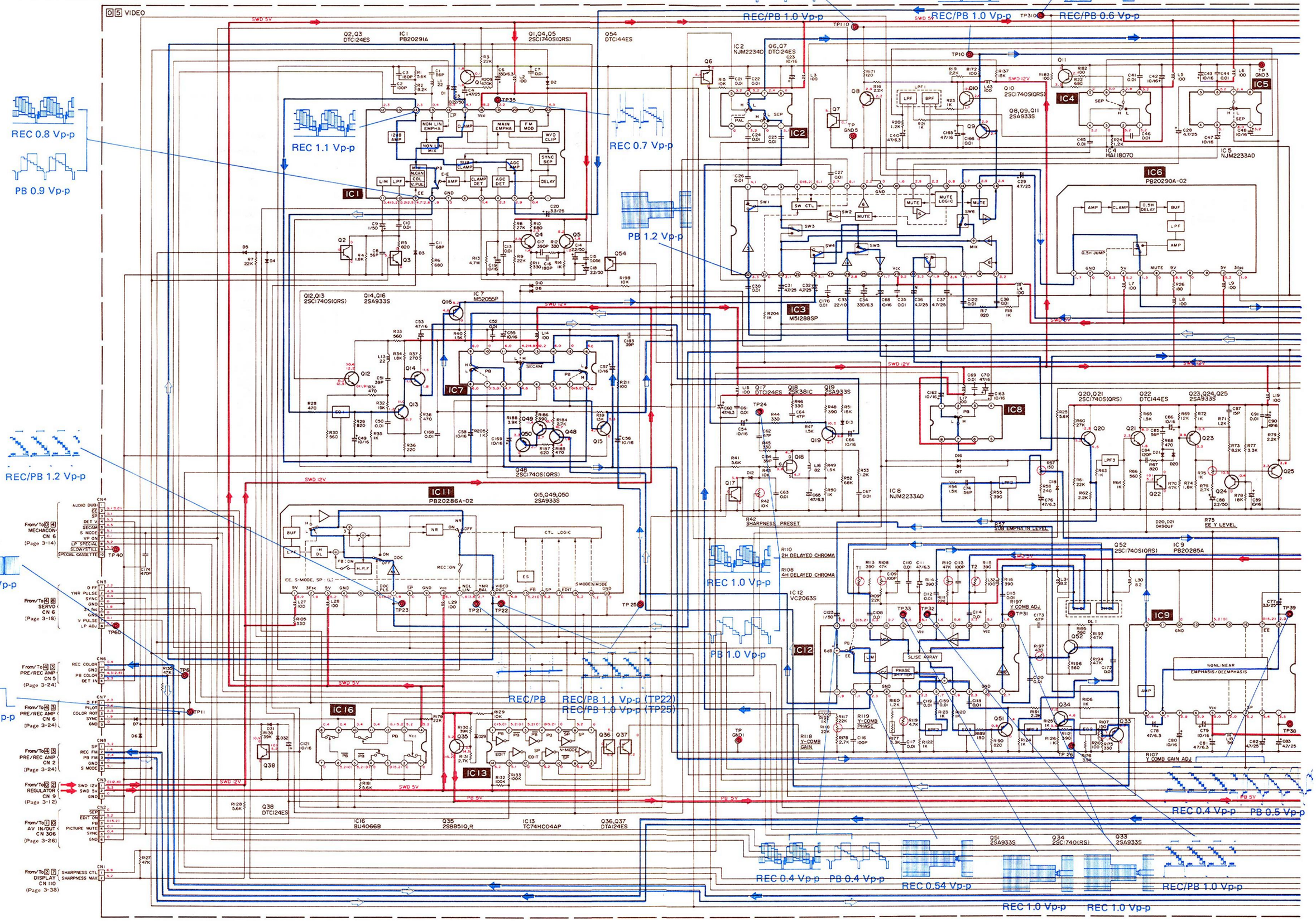
– SERVO –

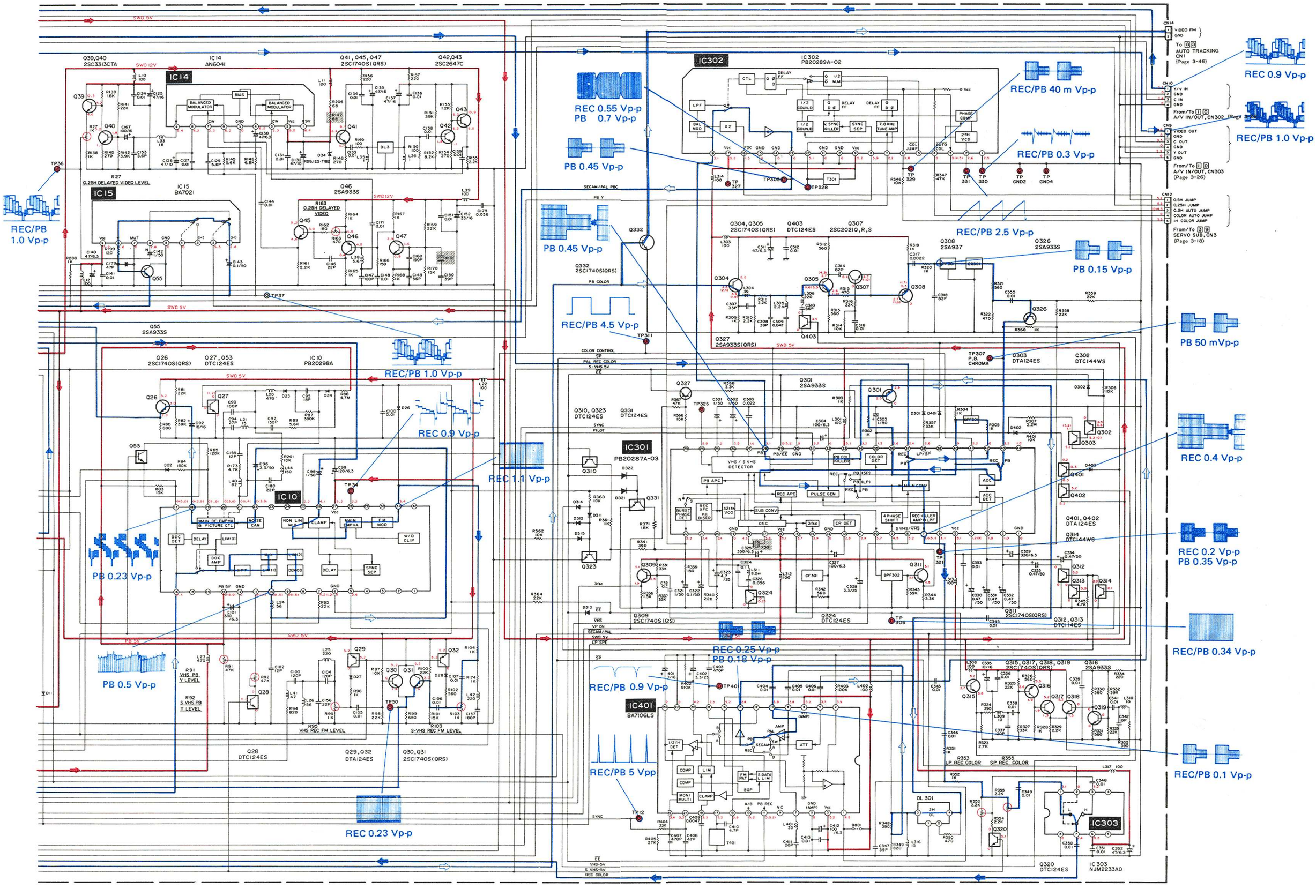


– SERVO SUB –

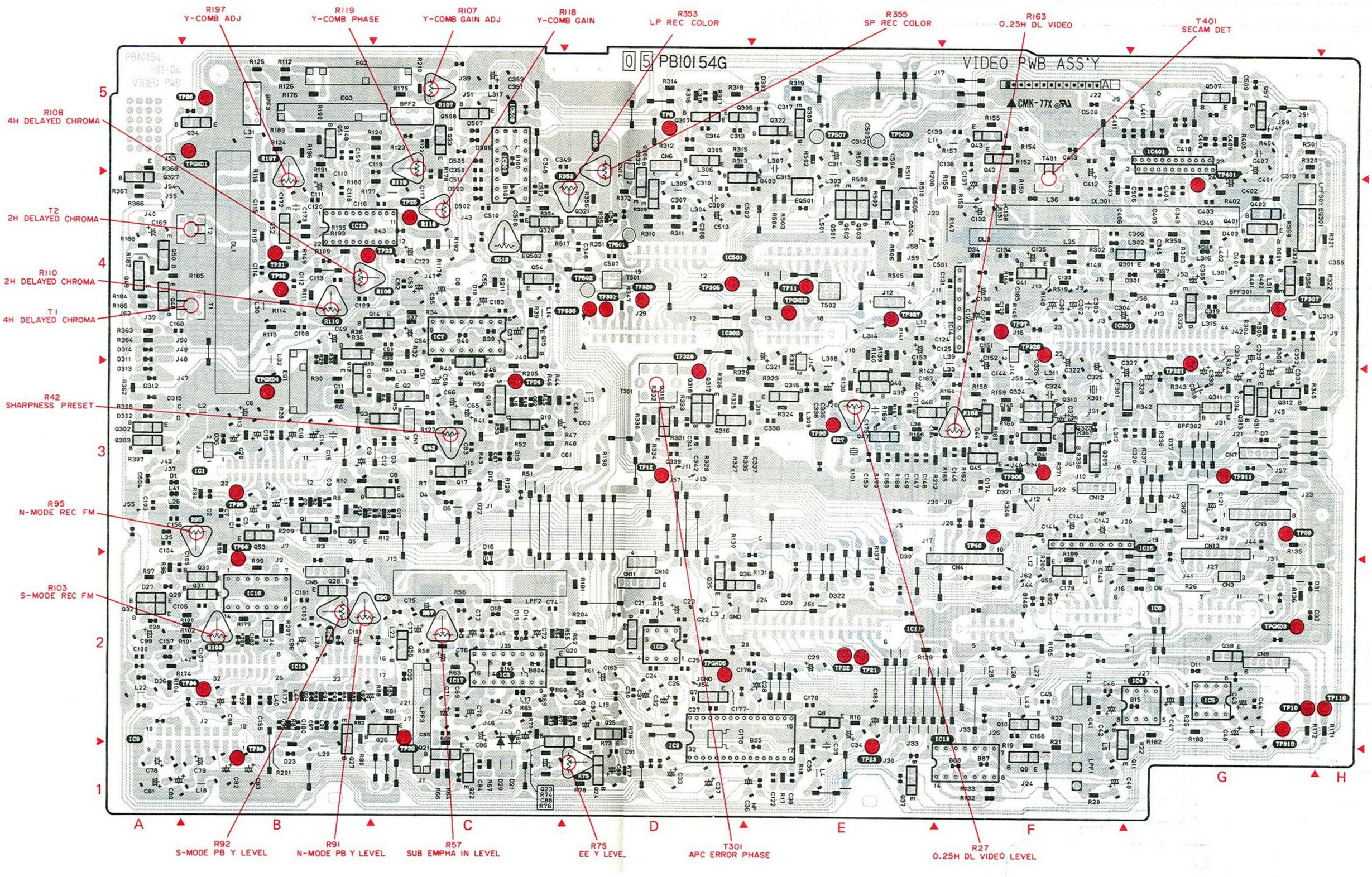


3.18 VIDEO SCHEMATIC DIAGRAM




IC14
AN6041
IC15
BA7021
IC10
PB20298A
IC302
PB20289A-02
IC301
PB20287A-03
IC401
BA7106LS
IC303
NJM2233AD
REC/PB 1.0 Vp-p
REC 0.9 Vp-p
REC 0.55 Vp-p
PB 0.7 Vp-p
PB 0.45 Vp-p
REC/PB 40 m Vp-p
REC/PB 0.3 Vp-p
REC/PB 2.5 Vp-p
PB 0.15 Vp-p
REC/PB 4.5 Vp-p
PB 50 mVp-p
REC 1.1 Vp-p
REC 0.4 Vp-p
PB 0.23 Vp-p
REC 0.2 Vp-p
PB 0.35 Vp-p
PB 0.5 Vp-p
REC/PB 0.34 Vp-p
REC 0.25 Vp-p
PB 0.18 Vp-p
REC/PB 0.9 Vp-p
REC/PB 0.1 Vp-p
REC/PB 5 Vpp
REC 0.23 Vp-p
SWD 5V
SWD 12V
Q39,Q40 2SC3313CTA
Q41,Q45,Q47 2SC1740S(QRS)
Q42,Q43 2SC2647C
Q46 2SA933S
Q55 2SA933S
Q26 2SC1740S(QRS)
Q27,Q53 DTC124ES
Q28 DTC124ES
Q29,Q32 DTA124ES
Q30,Q31 2SC1740S(QRS)
Q304,Q305 2SC1740S(QRS)
Q403 DTC124ES
Q307 2SC2021Q,R,S
Q308 2SA937
Q326 2SA933S
Q327 2SA933S(QRS)
Q332 2SC1740S(QRS)
Q301 2SA933S
Q303 DTA124ES
Q302 DTC144WS
Q310,Q323 DTC124ES
Q331 DTC124ES
Q309 2SC1740S(QS)
Q324 DTC124ES
Q311 2SC1740S(QRS)
Q312,Q313 DTC114ES
Q315,Q317,Q318,Q319 2SC1740S(QRS)
Q316 2SA933S
Q401,Q402 DTA124ES
Q314 DTC144WS
Q320 DTC124ES
CN14
VIDEO FM
GND
To AUTO TRACKING CN1 (Page 3-46)
CN10
Y/V IN
GND
C IN
GND
From/To A/V IN/OUT, CN302 (Page 3-26)
CN9
VIDEO OUT
GND
C OUT
GND
Y OUT
GND
From/To A/V IN/OUT, CN303 (Page 3-26)
CN12
0.5H JUMP
0.25H JUMP
0.5H AUTO JUMP
COLOR AUTO JUMP
1H COLOR JUMP
From/To SERVO SUB, CN3 (Page 3-18)
TP36
TP37
TP34
TP50
TP12
TP311
TP305
TP328
TP307 P.B. CHROMA
TP329
TP330
TP331
TP GND2
TP GND4
TP 327
TP 321
TP 306
R27 0.25H DELAYED VIDEO LEVEL
R91 VHS PB Y LEVEL
R92 S VHS PB Y LEVEL
R95 VHS REC FM LEVEL
R103 S-VHS REC FM LEVEL
R163 0.25H DELAYED VIDEO
R355 SP REC COLOR
R353 LP REC COLOR
DL 301
DL3
T301
T401
BPF 301
BPF 302
CF 501
BPF 303

3.19 VIDEO CIRCUIT BOARD



IC	
SYMBOL No.	ADDRESS No.
IC2	2-D
IC3	2-D
IC4	2-G
IC5	2-G
IC6	2-G
IC7	4-C
IC8	2-C
IC9	2-B
IC10	2-B
IC11	2-E
IC12	4-B
IC13	1-F
IC14	4-F
IC15	3-F
IC16	2-B
IC301	4-G
IC302	4-D
IC303	5-C
IC401	5-G

TRANSISTOR(Q)	
SYMBOL No.	ADDRESS No.
Q1	3-B
Q2	3-C
Q3	3-C
Q4	3-C
Q5	3-B
Q6	2-D
Q7	2-D
Q8	2-E
Q9	1-F
Q10	2-F
Q11	1-F
Q12	3-B
Q13	4-B
Q14	4-C
Q15	4-C
Q16	4-C
Q17	3-C
Q18	3-C
Q19	3-C
Q20	2-D
Q21	1-C
Q22	1-C
Q23	1-C
Q24	1-D
Q25	2-D
Q26	2-C
Q27	1-B
Q28	2-B
Q29	2-A
Q30	2-B
Q31	2-B
Q32	2-A
Q33	5-C
Q34	5-B
Q35	2-D
Q36	2-D
Q37	1-E
Q38	2-G
Q39	3-E
Q40	3-E

TRANSISTOR(Q)	
SYMBOL No.	ADDRESS No.
Q41	4-F
Q42	5-F
Q43	5-F
Q45	3-F
Q46	3-E
Q47	3-E
Q48	4-A
Q49	4-A
Q50	4-A
Q51	5-B
Q52	4-B
Q53	3-B
Q54	4-C
Q55	2-F
Q318	3-D
Q319	3-D
Q320	4-C
Q323	3-F
Q324	3-F
Q326	4-G
Q327	4-A
Q332	4-D
Q401	4-G
Q402	4-G
Q403	4-D

DIODE(D)	
SYMBOL No.	ADDRESS No.
D1	3-A
D3	3-C
D4	3-C
D5	3-C
D6	2-G
D7	3-G
D8	4-C
D10	4-C
D11	2-G
D12	3-C
D13	3-C
D16	2-C
D17	2-C
D18	2-C
D20	1-C
D21	2-C
D22	3-C
D23	1-B
D26	2-A
D27	2-A
D28	2-A
D29	2-E
D31	2-G
D32	2-G
D34	4-F
D301	4-G
D302	3-A
D303	5-E
D311	4-A
D312	3-A
D313	3-A
D314	4-A
D315	3-A
D321	3-F

DIODE(D)	
SYMBOL No.	ADDRESS No.
D322	2-E
D401	4-G
D402	4-G
D403	4-G

COIL(L)	
SYMBOL No.	ADDRESS No.
L2	3-B
L3	2-D
L4	1-E
L5	1-F
L6	2-G
L7	2-F
L8	2-G
L9	2-G
L10	4-E
L11	5-F
L12	2-F
L13	3-C
L14	4-C
L15	3-D
L16	2-C
L17	2-C
L18	1-B
L19	2-D
L20	1-B
L21	2-B
L22	2-A
L23	2-C
L24	2-B
L25	3-A
L26	3-A
L27	2-F
L28	2-F
L29	2-F
L30	4-B
L31	5-B
L32	4-B
L33	3-F
L35	4-F
L36	4-F
L38	3-E
L39	4-F
L40	2-B
L41	3-A
L42	2-A
L43	2-F
L44	2-B
L301	4-G
L302	4-F
L303	4-E
L304	4-D
L305	4-D
L306	4-D
L307	5-E
L308	4-E
L309	3-E
L310	3-E
L311	3-F
L312	3-F
L313	4-G
L314	4-E

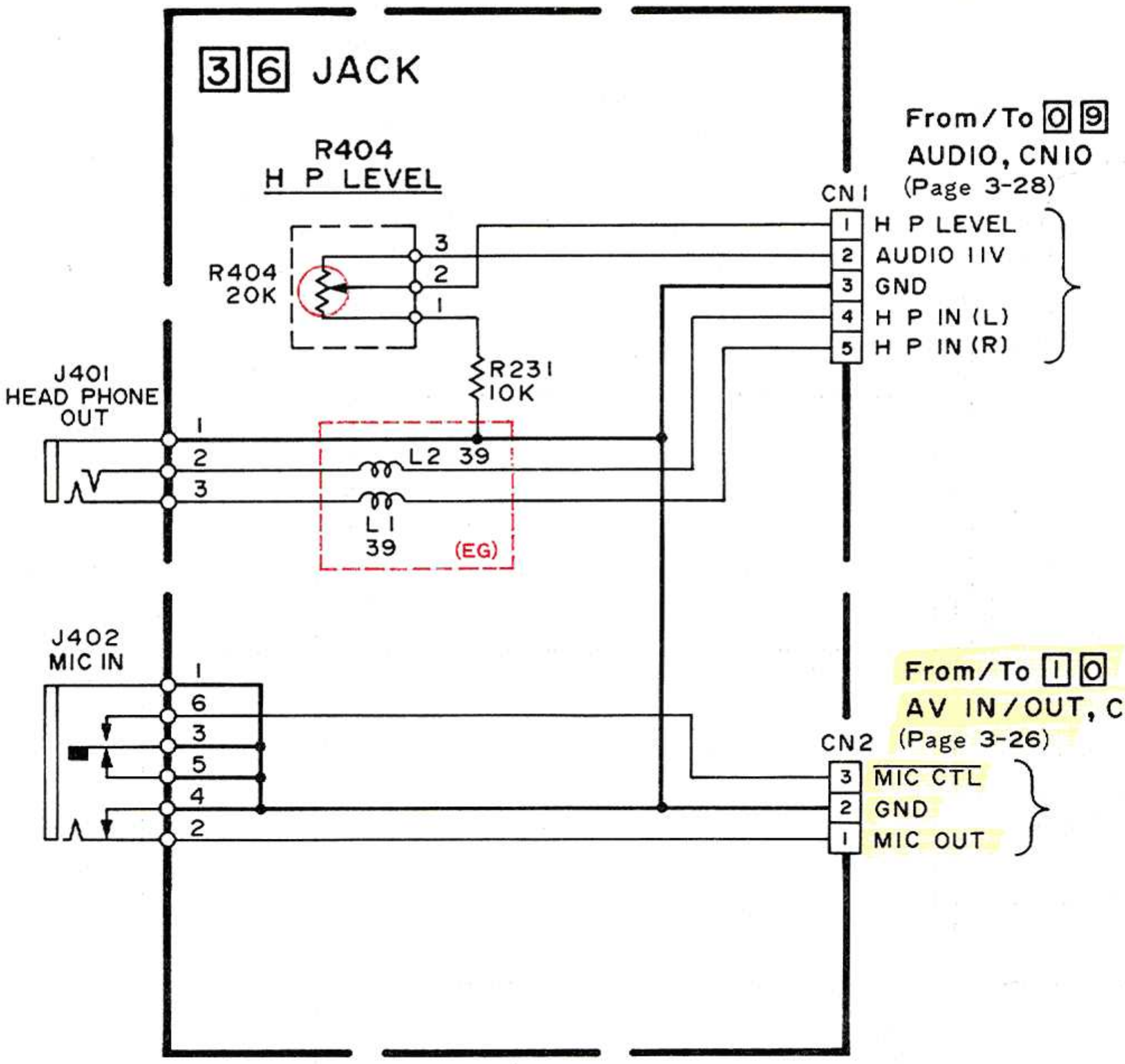
COIL(L)	
SYMBOL No.	ADDRESS No.
L316	4-G
L317	5-C
L318	4-G
L401	5-G
L402	4-G

TEST PIN(TP)	
SYMBOL No.	ADDRESS No.
TP6	5-D
TP10	2-G
TP11	4-E
TP12	3-D
TP21	2-E
TP22	2-E
TP23	1-E
TP24	3-C
TP25	4-C
TP26	5-B
TP31	4-B
TP32	4-B
TP33	4-B
TP34	2-B
TP35	3-B
TP36	3-E
TP37	4-F
TP38	1-B
TP39	2-C
TP40	3-F
TP50	2-B
TP60	3-G
TP110	2-H
TP305	4-D
TP306	3-F
TP307	4-G
TP310	2-G
TP311	3-G
TP321	4-G
TP326	4-F
TP327	4-E
TP328	3-D
TP329	4-D
TP330	4-D
TP331	4-D
TP401	4-G
TP501	4-D
TP502	4-D
TP503	5-E
TP507	5-F
TP GND1	5-B
TP GND2	4-E
TP GND3	2-G
TP GND4	3-B
TP GND5	2-D

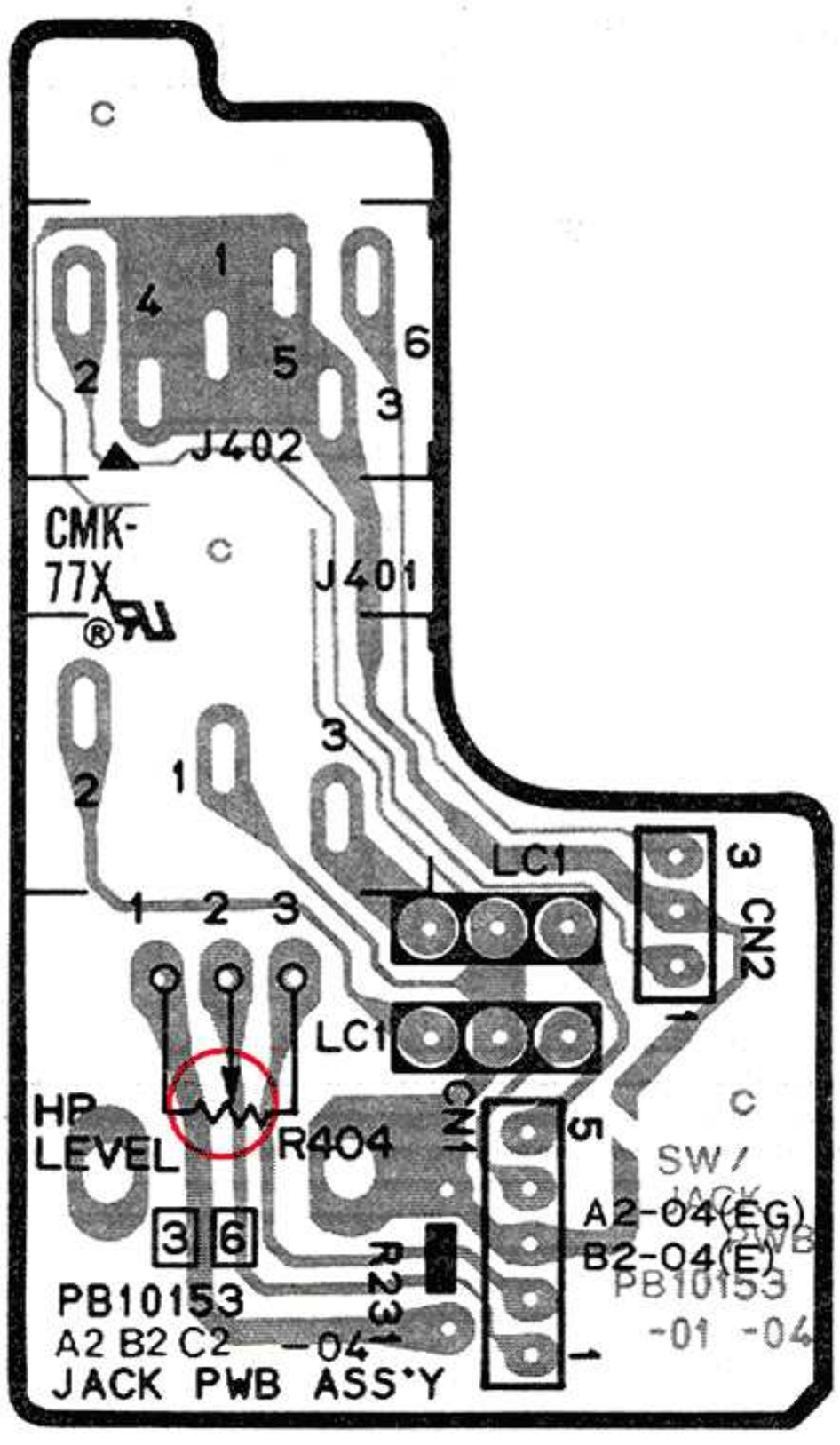
CONNECTOR(CN)	
SYMBOL No.	ADDRESS No.
CN1	3-C
CN2	3-G
CN3	2-G
CN4	2-F
CN5	3-G
CN6	5-D
CN7	3-G
CN8	2-B
CN9	2-G
CN10	2-D
CN12	3-F
CN14	5-D

3.20 JACK SCHEMATIC DIAGRAM AND CIRCUIT BOARD

— SCHEMATIC DIAGRAM —

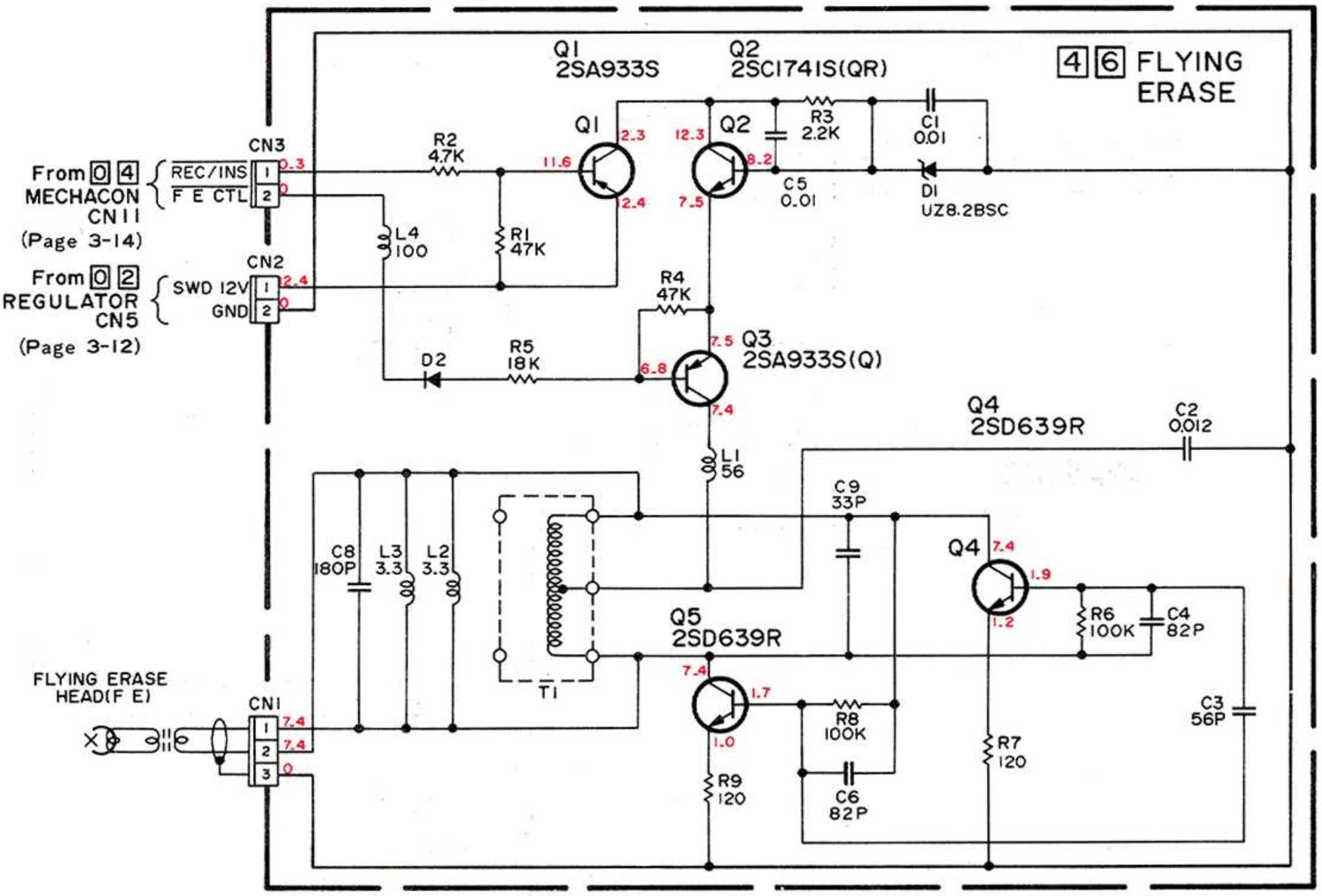


— CIRCUIT BOARD —

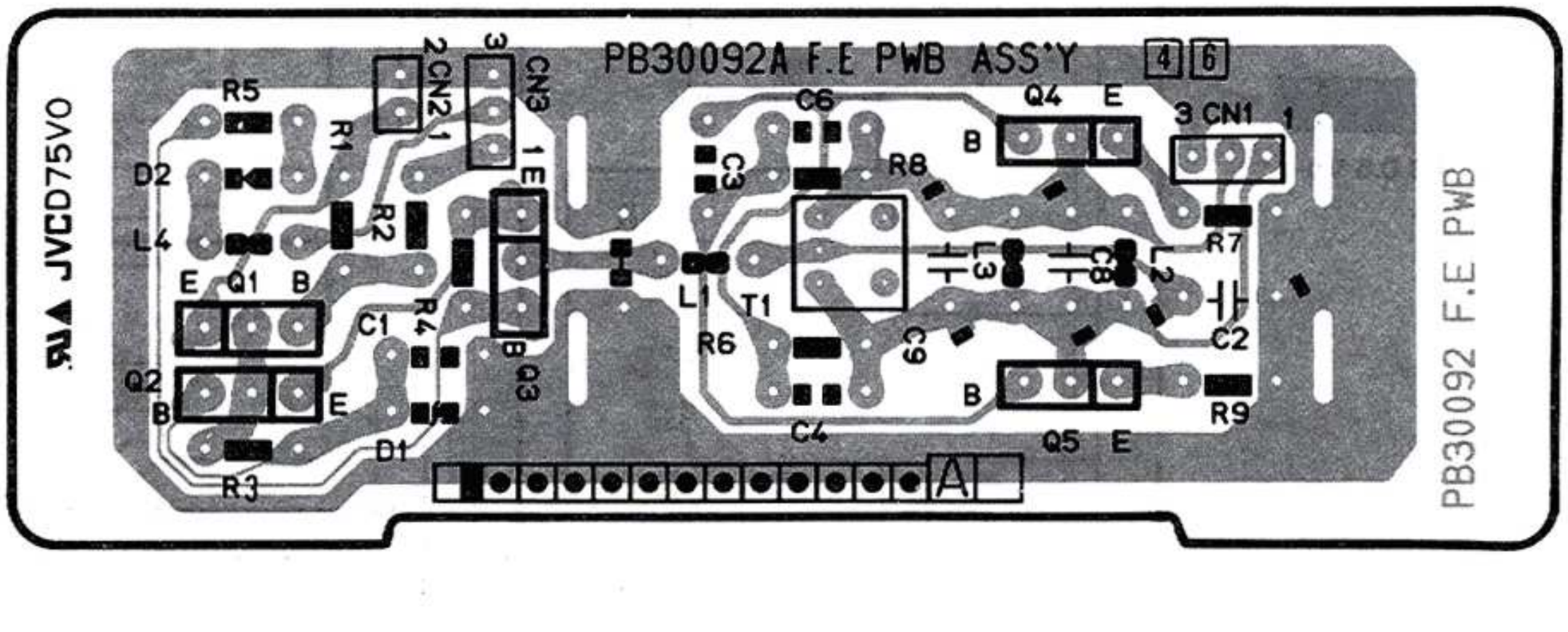


3.21 FLYING ERASE SCHEMATIC DIAGRAM AND CIRCUIT BOARD

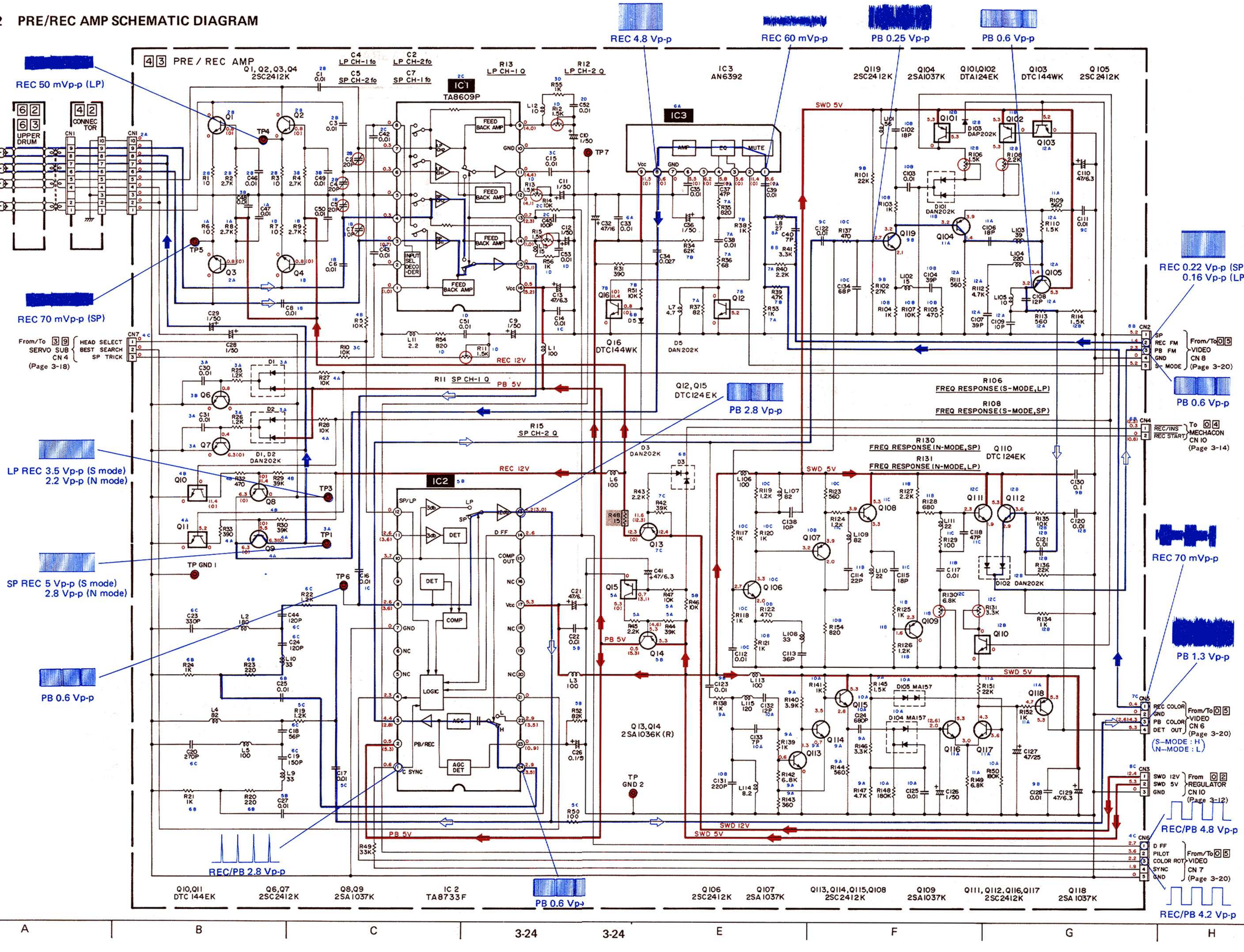
– SCHEMATIC DIAGRAM –



– CIRCUIT BOARD –

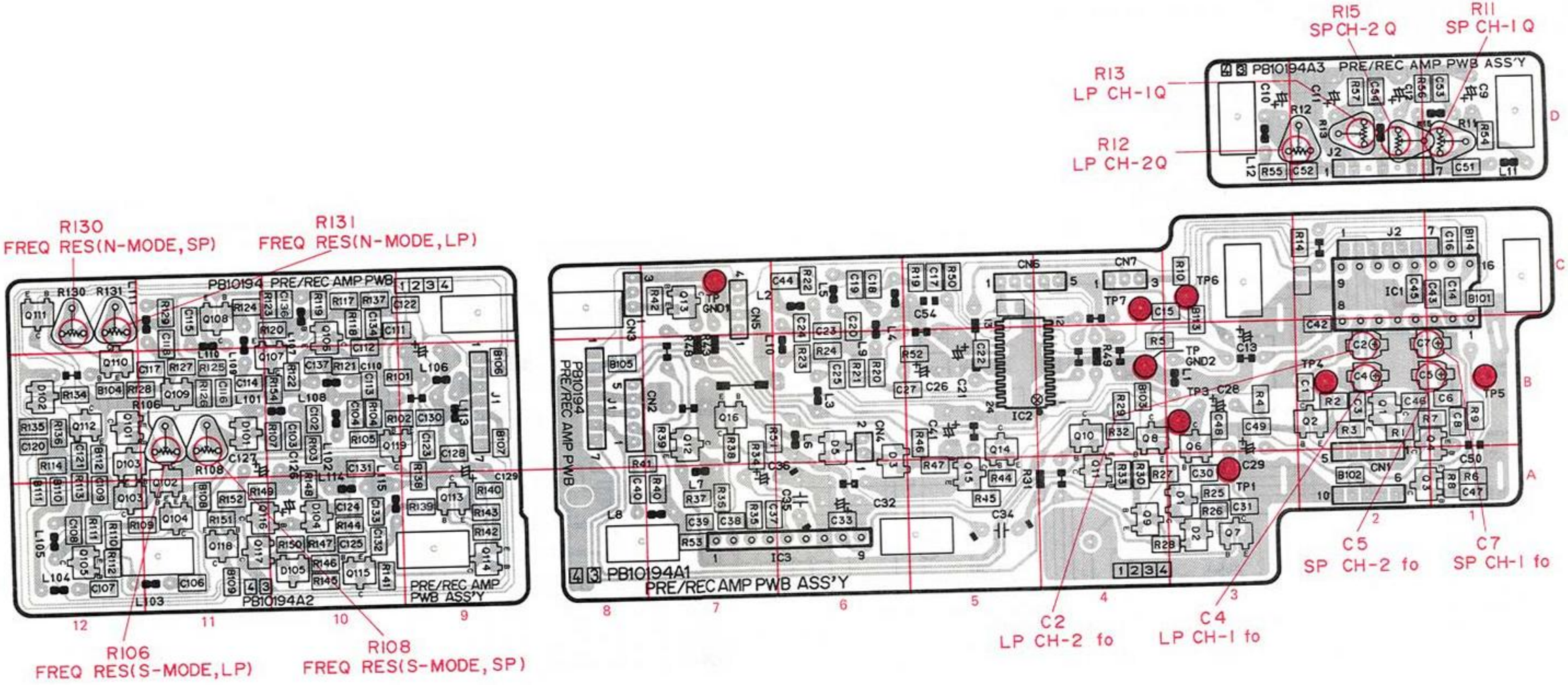


3.22 PRE/REC AMP SCHEMATIC DIAGRAM

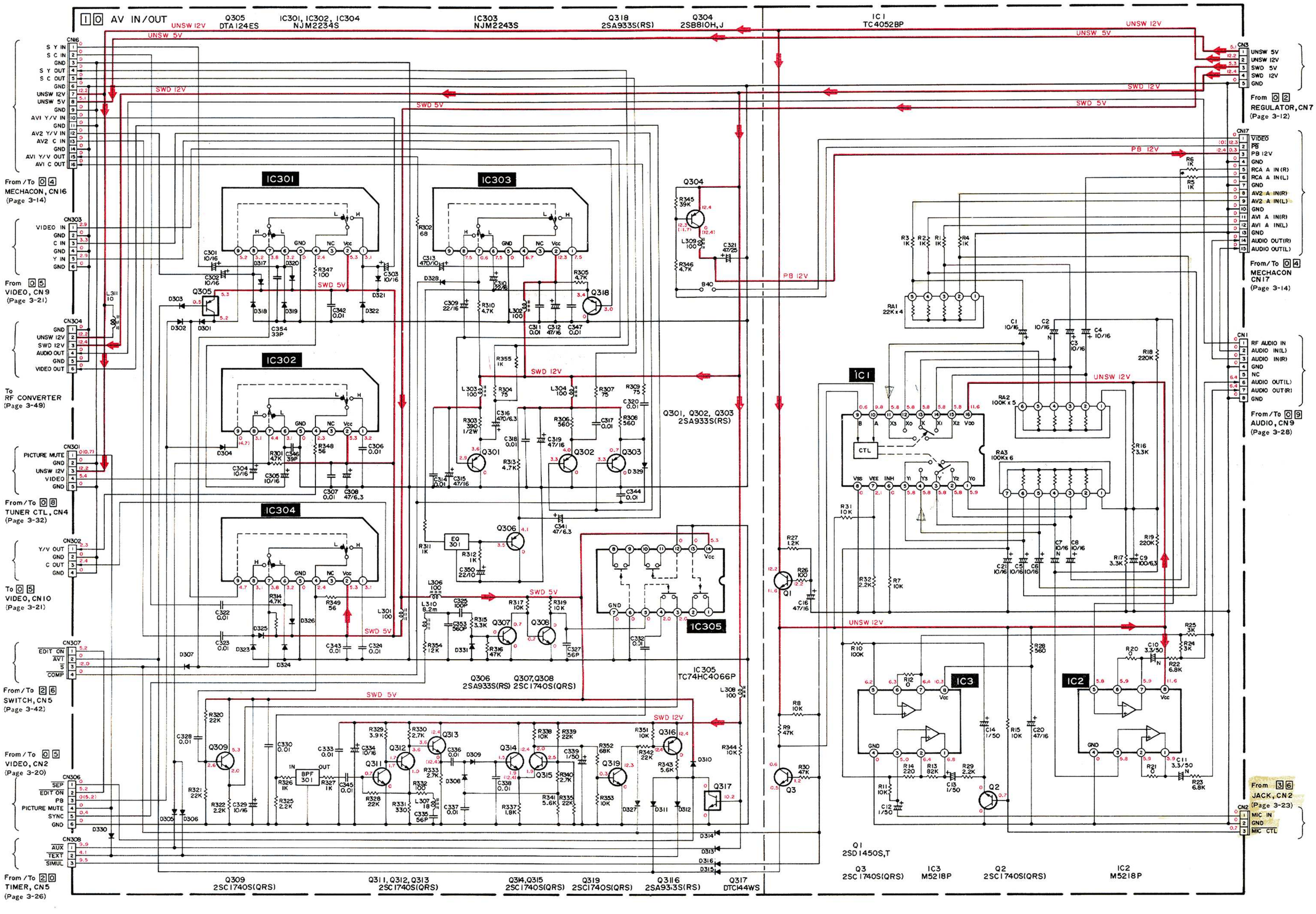


3.23 PRE/REC AMP CIRCUIT BOARD

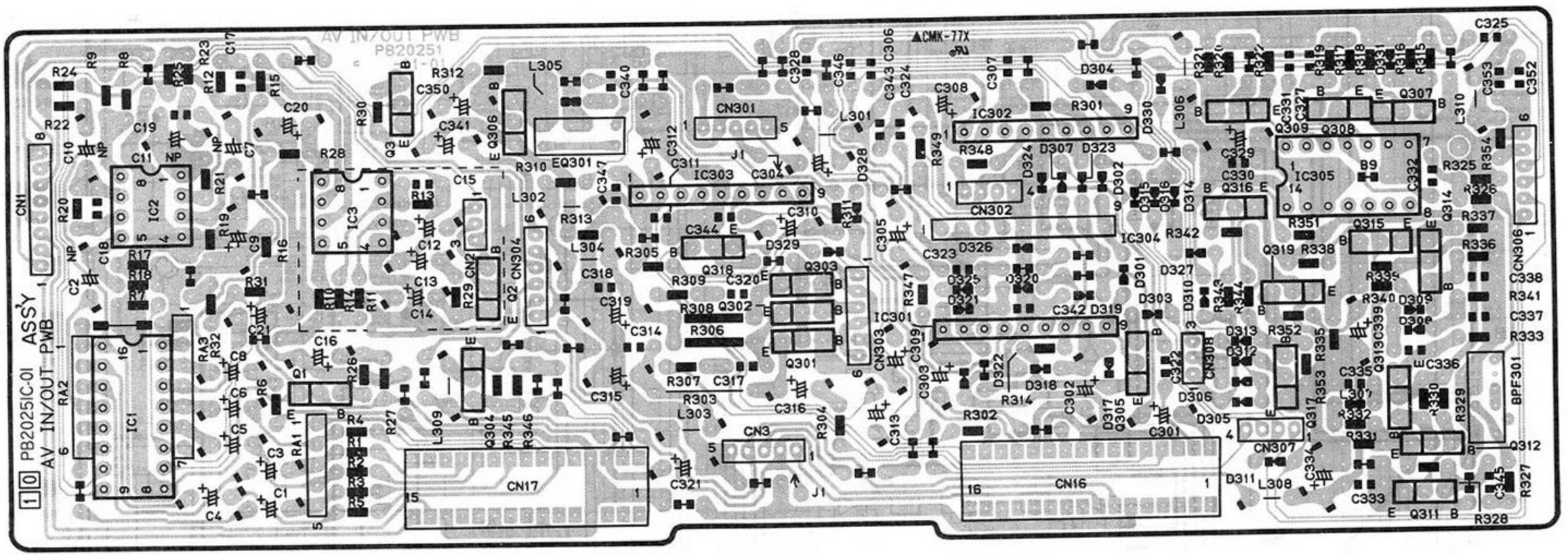
Note: Double edging indicates not used in this model.
Examples; Resistor, Capacitor, Transistor, DIODE



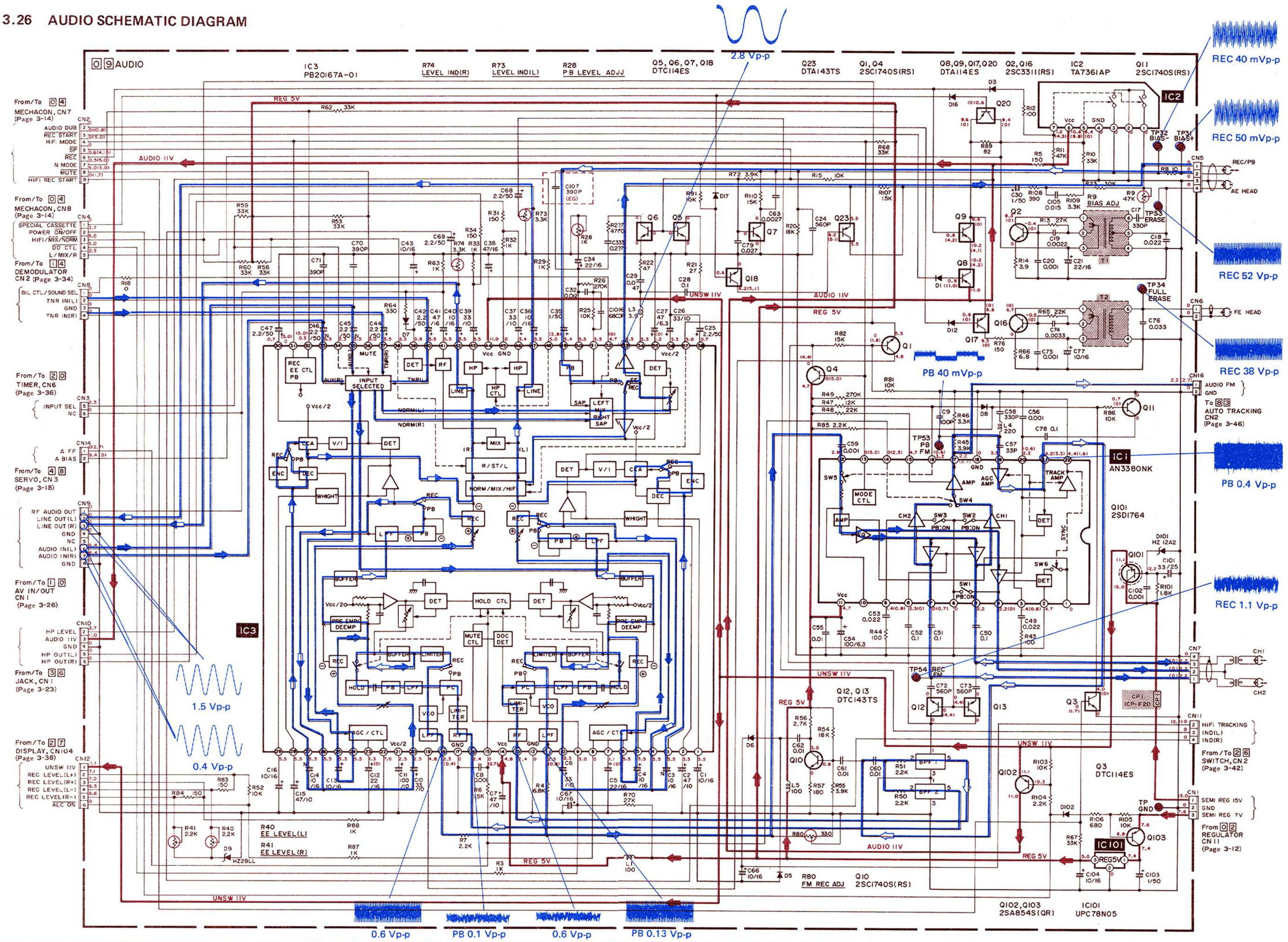
3.24 AV IN/OUT SCHEMATIC DIAGRAM



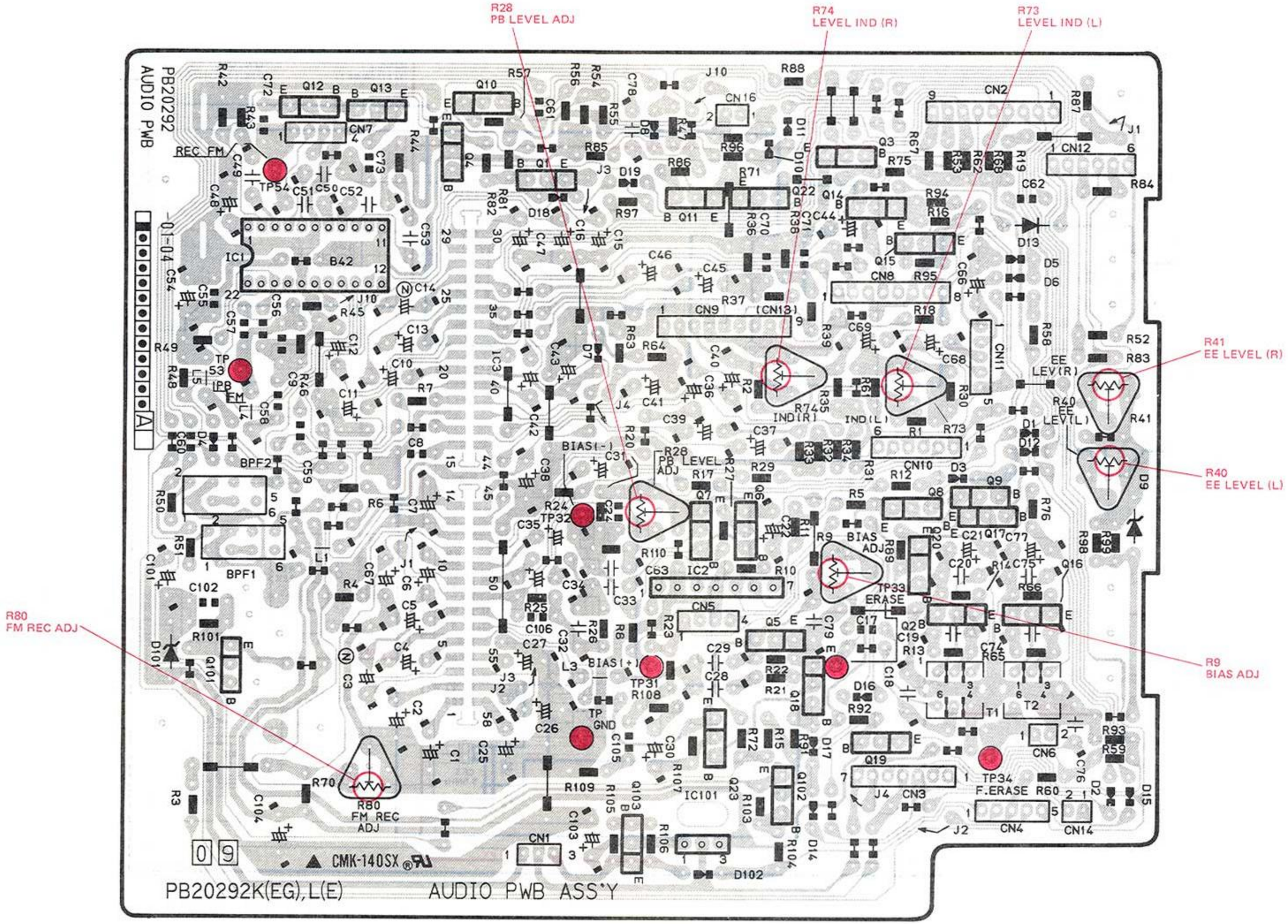
3.25 AV IN/OUT CIRCUIT BOARD



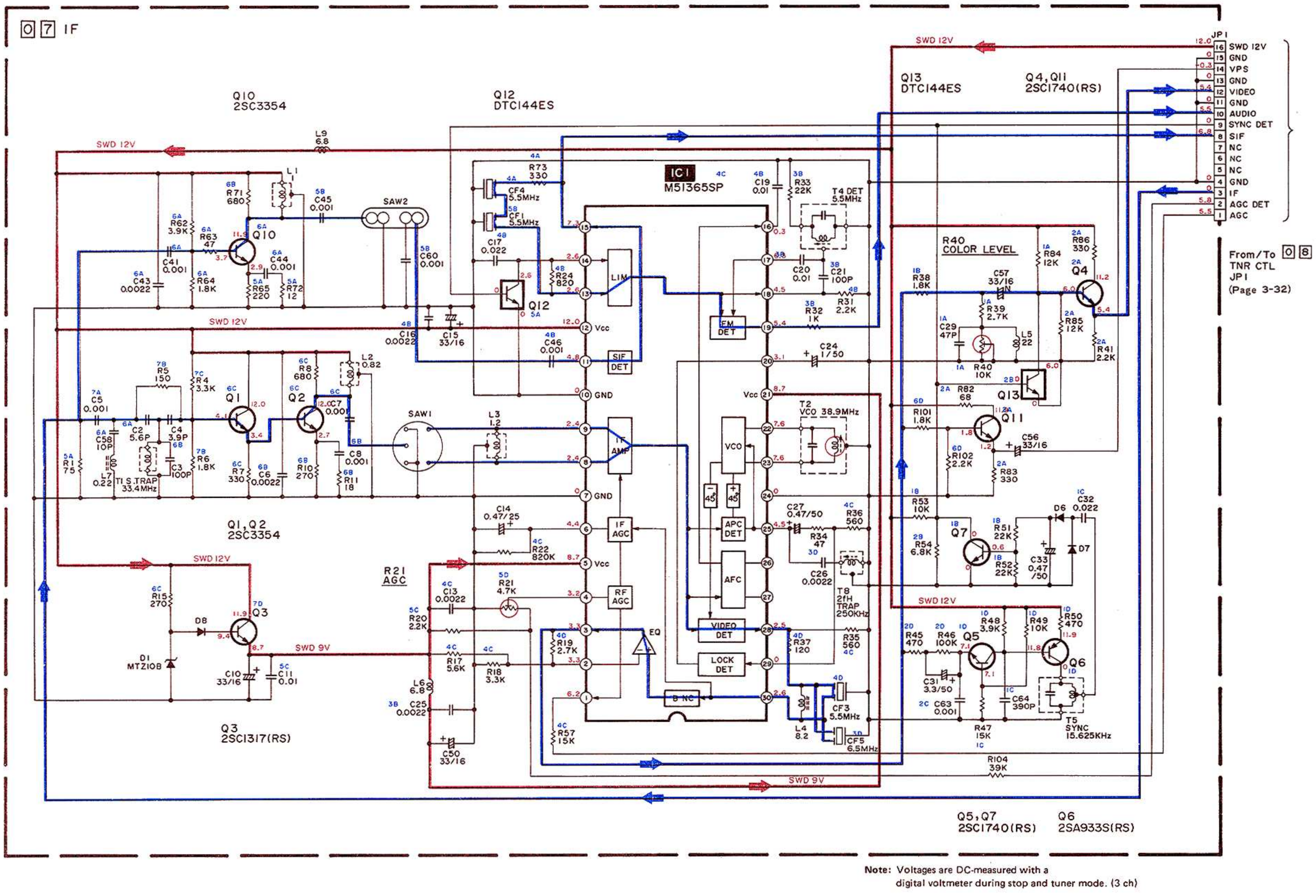
3.26 AUDIO SCHEMATIC DIAGRAM



3.27 AUDIO CIRCUIT BOARD



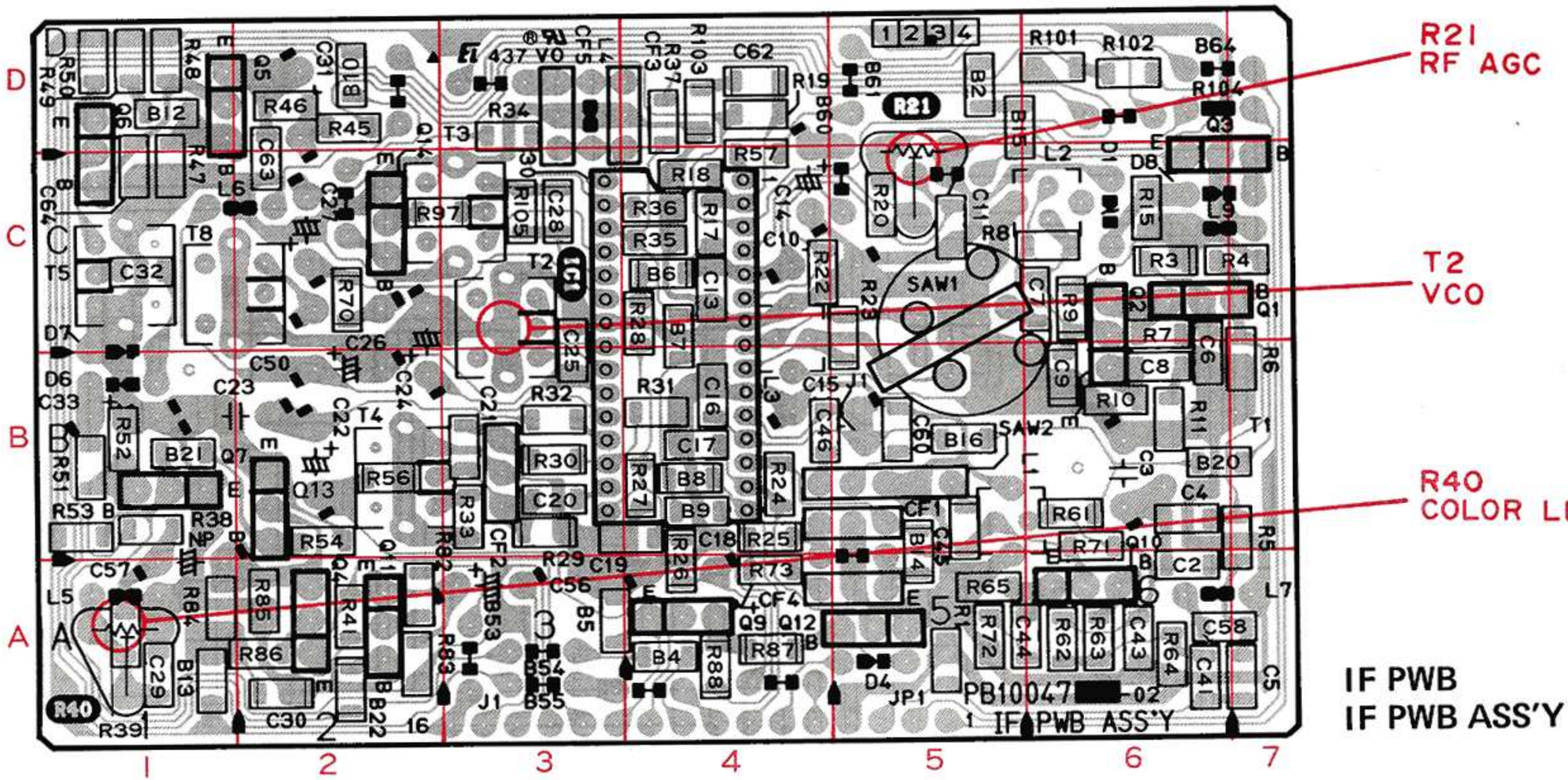
3.28 IF SCHEMATIC DIAGRAM



Note: Voltages are DC-measured with a digital voltmeter during stop and tuner mode. (3 ch)

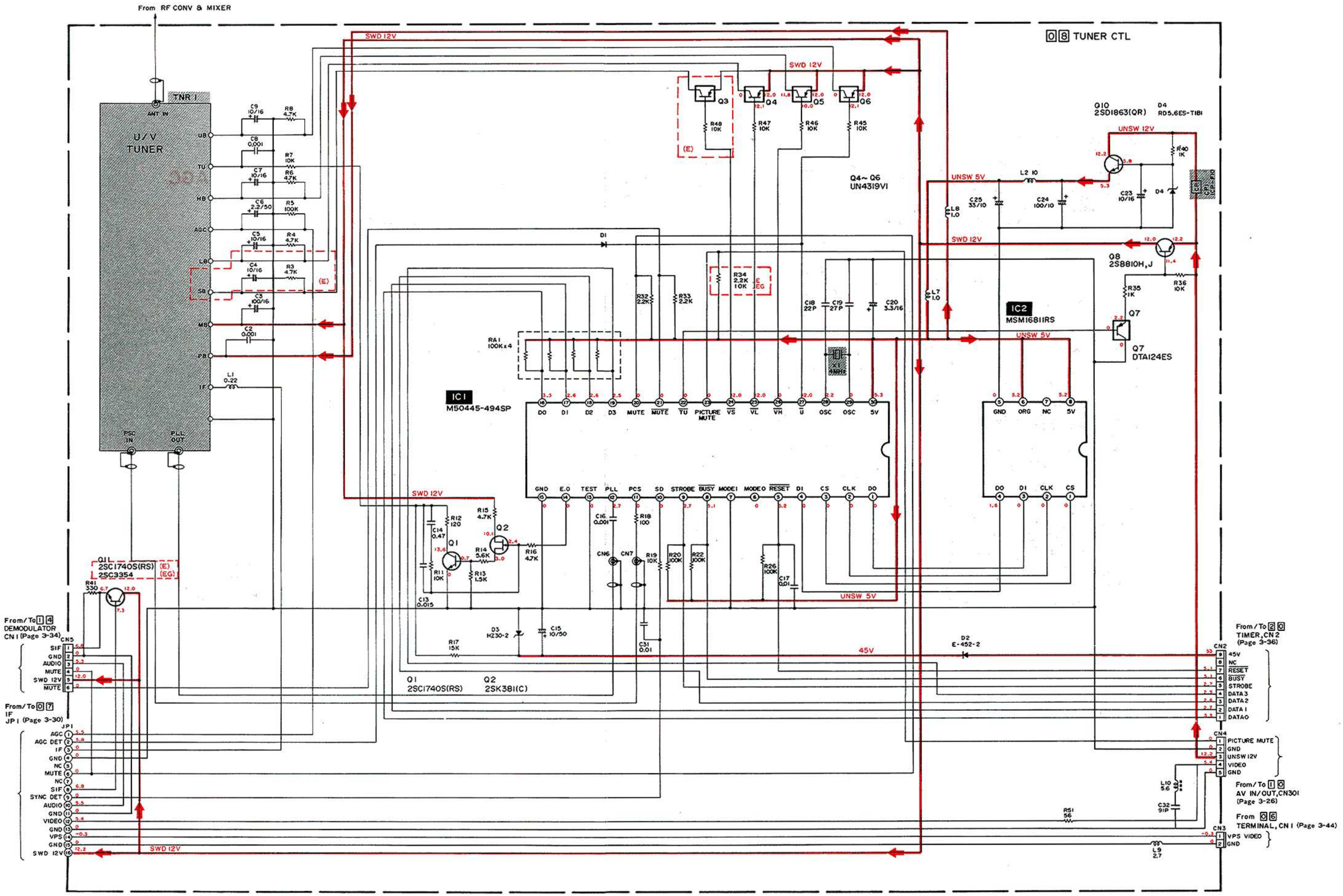
3.29 IF CIRCUIT BOARD

Note: Double edging indicates not used in this model.
Examples; Resistor, Capacitor, Transistor, DIODE



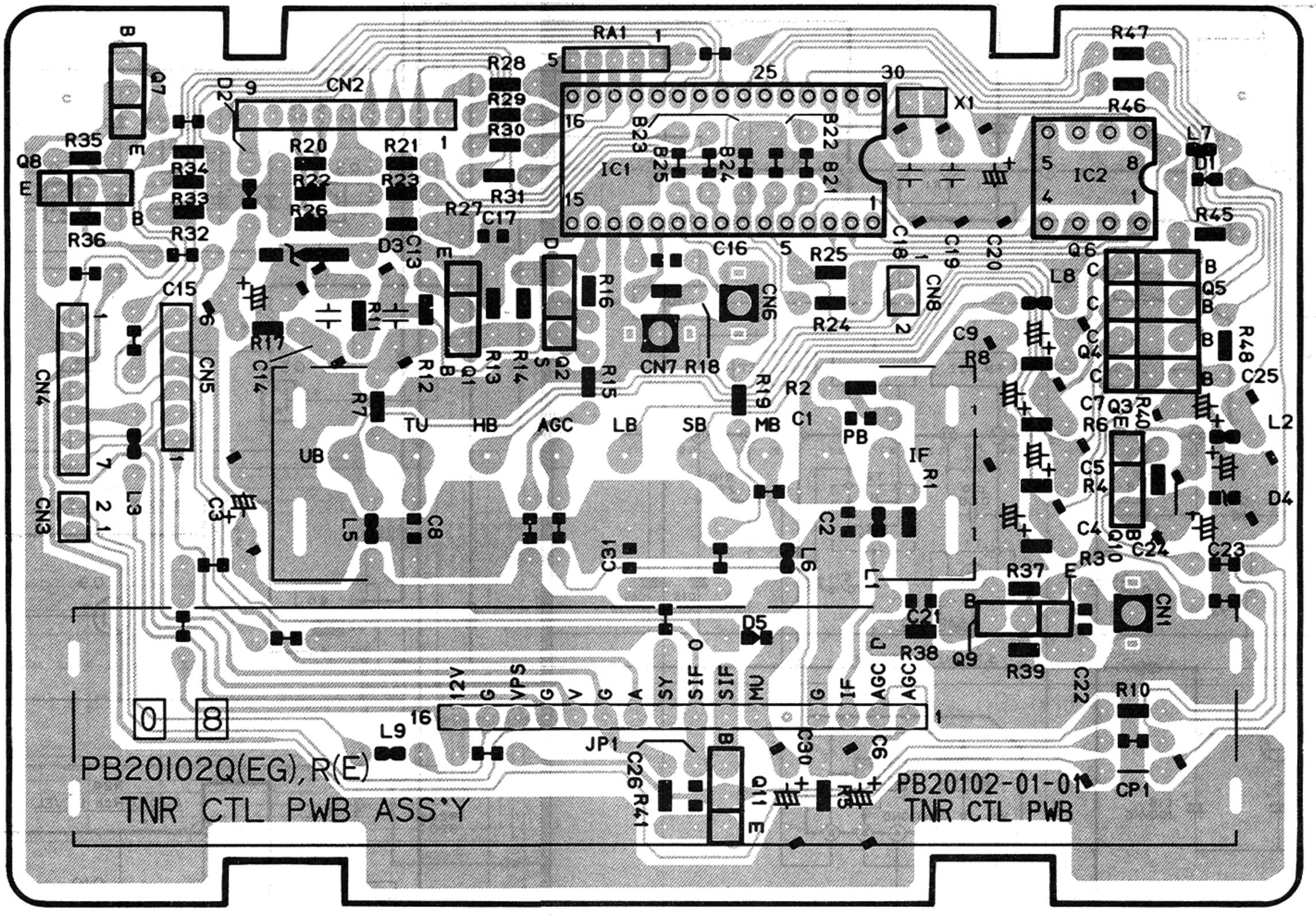
IF PWB	PB10047-01-03
IF PWB ASS'Y	PB10047AL

3.30 TUNER CONTORL SCHEMATIC DIAGRAM

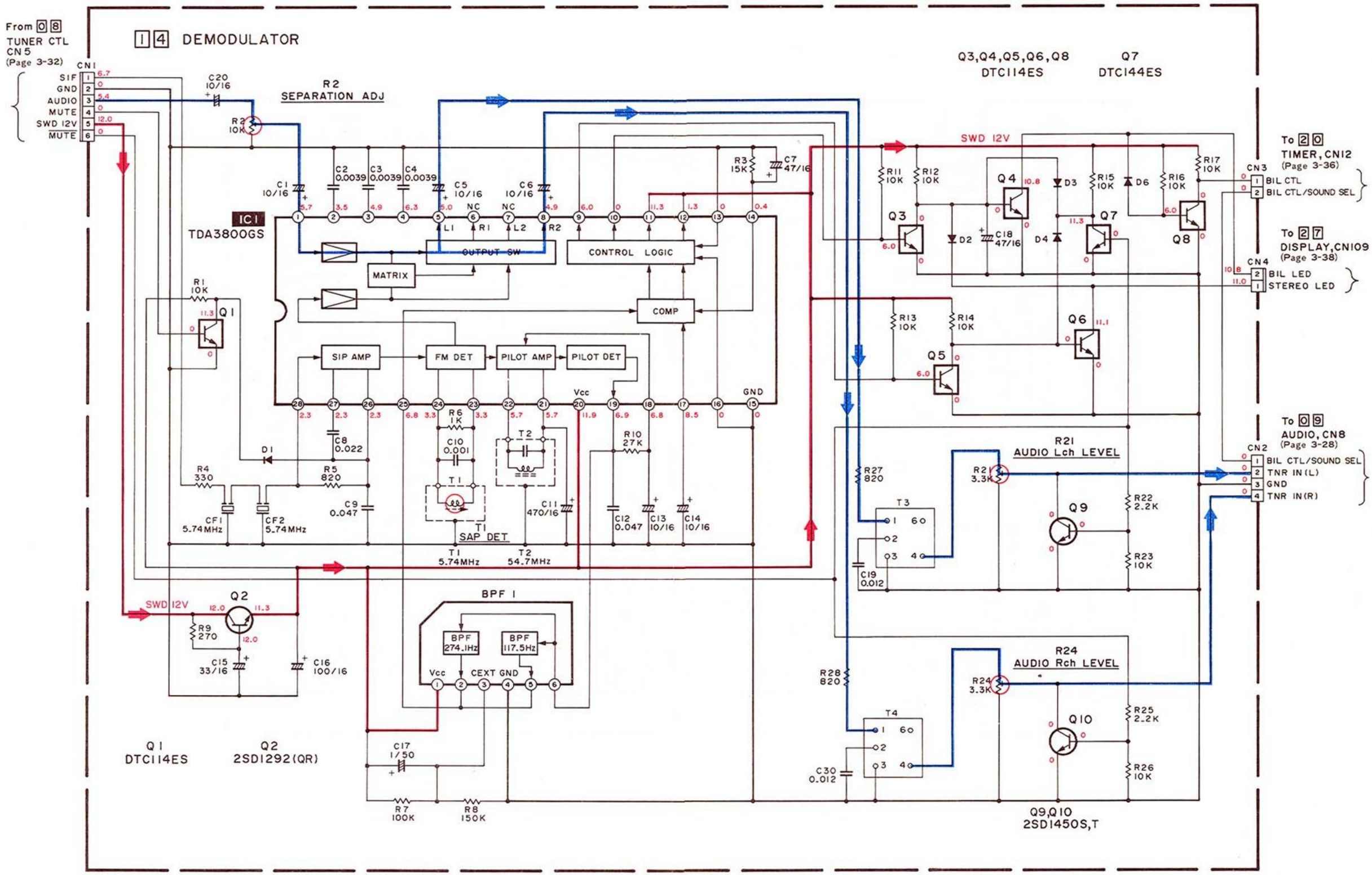


Note: Voltages are DC-measured with a digital voltmeter during stop and tuner mode. (3 ch)

3.31 TUNER CONTROL CIRCUIT BOARD

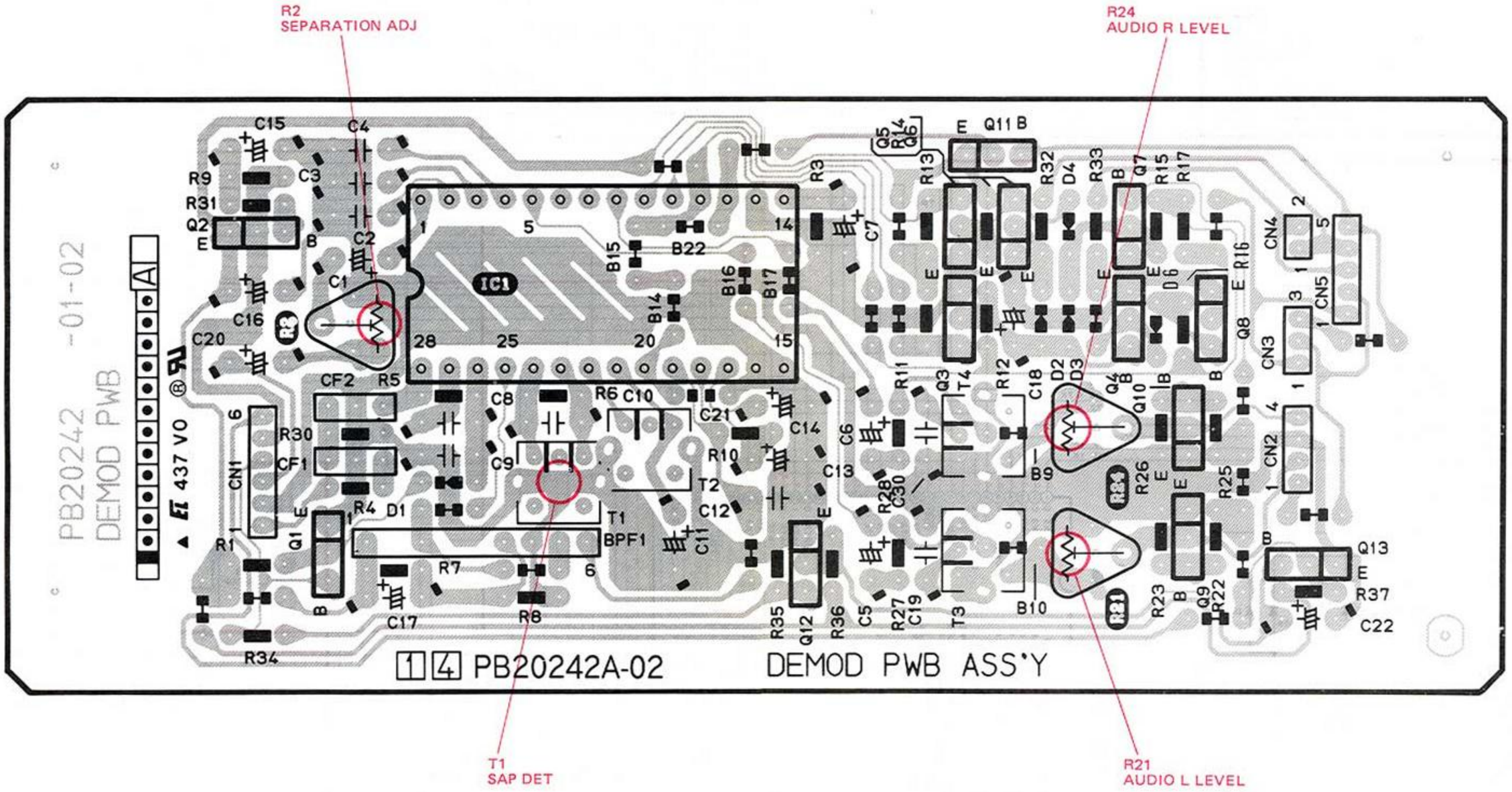


3.32 DEMODULATOR SCHEMATIC DIAGRAM

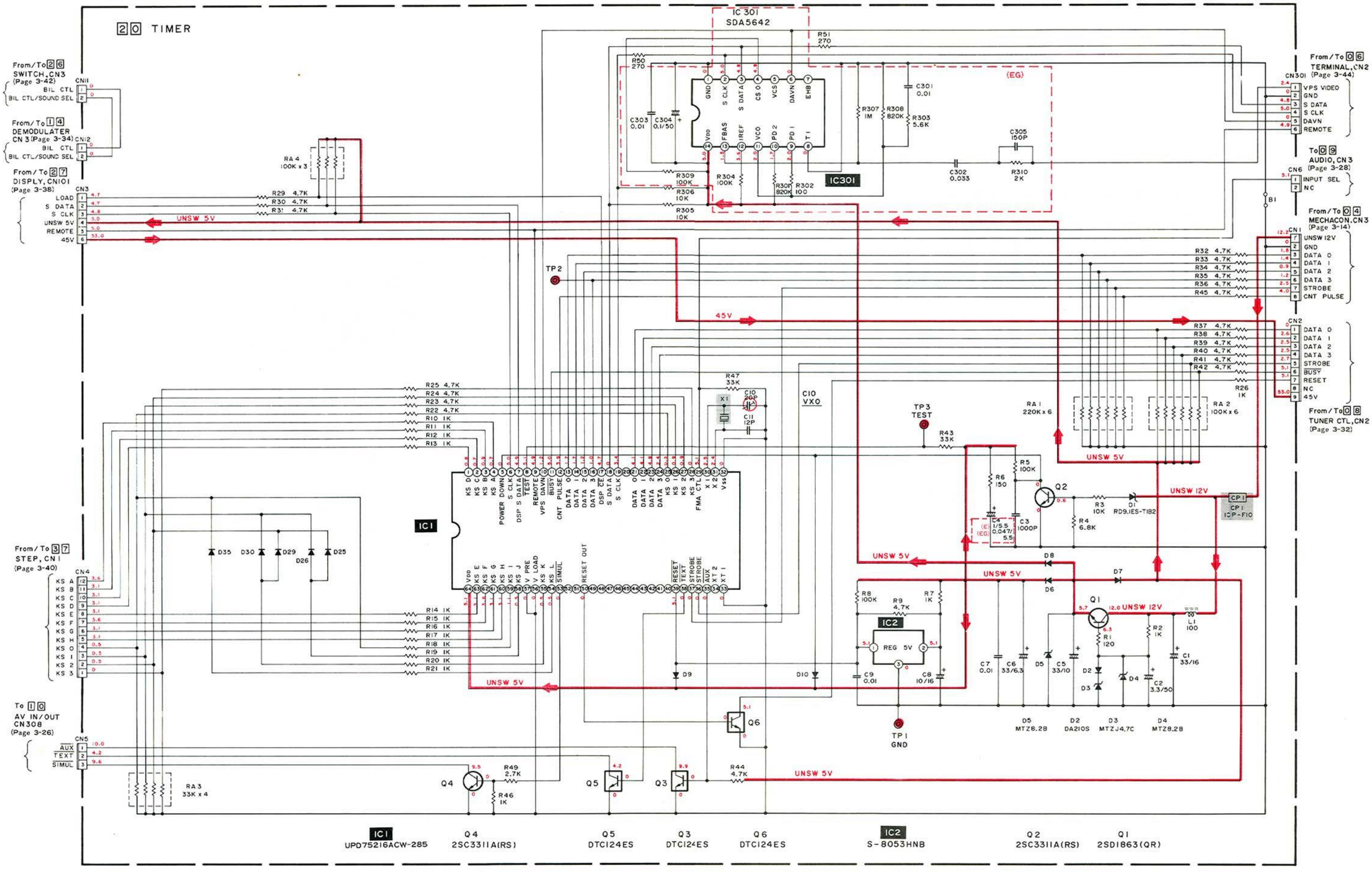


Note: Voltages are DC-measured with a digital voltmeter during stop and tuner mode. (3 ch)

3.33 DEMODULATOR CIRCUIT BOARD

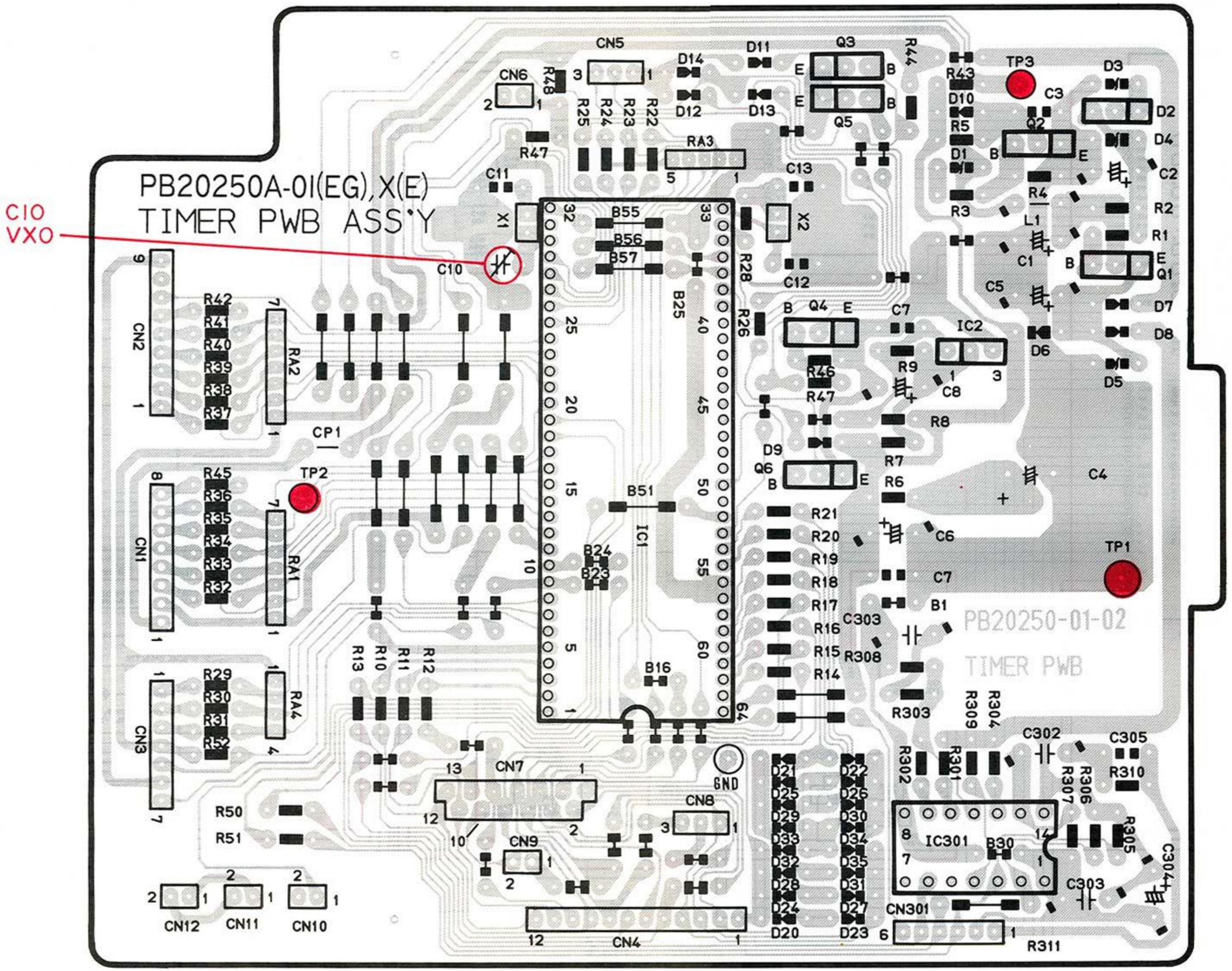


3.34 TIMER SCHEMATIC DIAGRAM

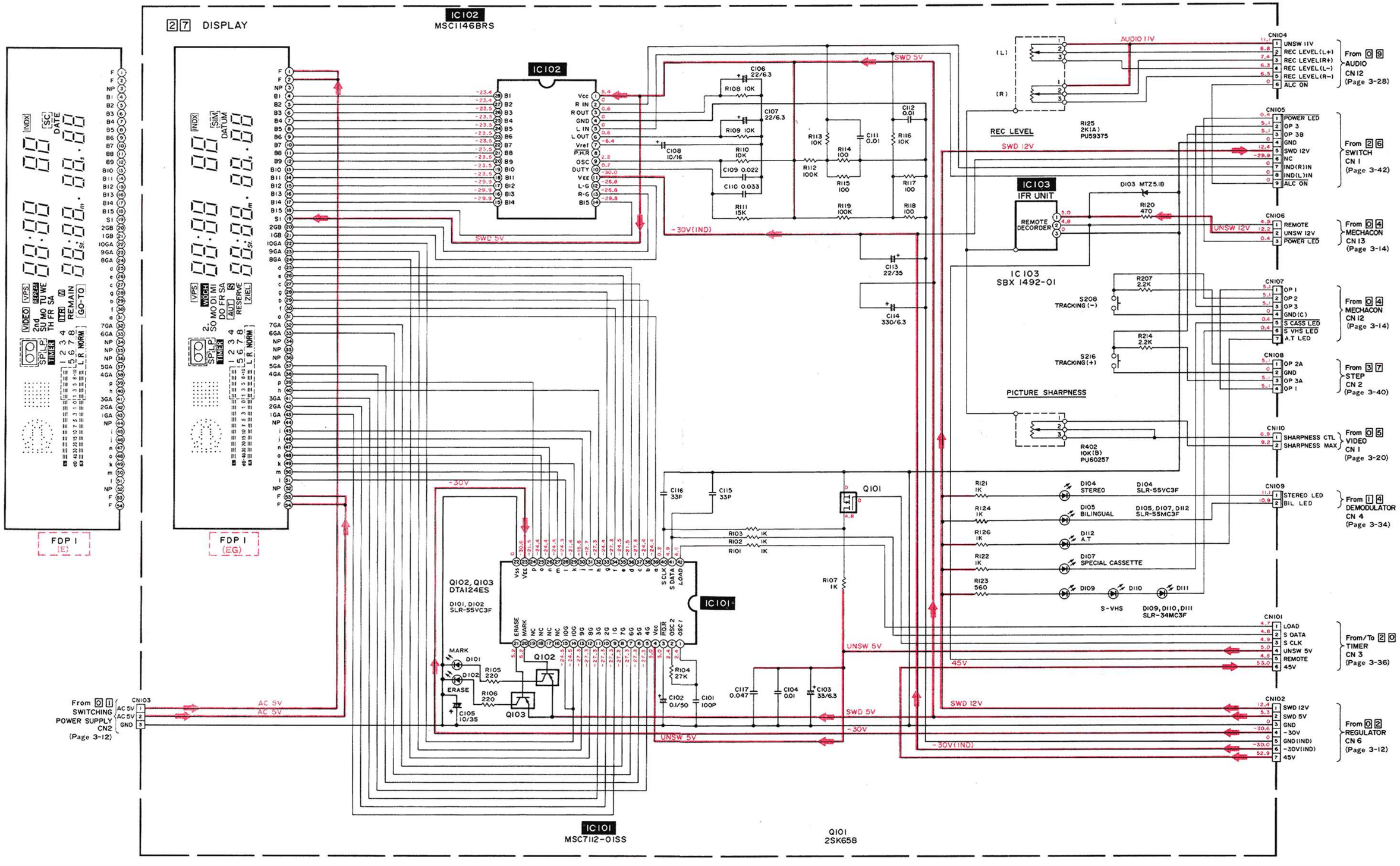


Note: Voltages are DC-measured with a digital voltmeter during stop and tuner mode.

3.35 TIMER CIRCUIT BOARD

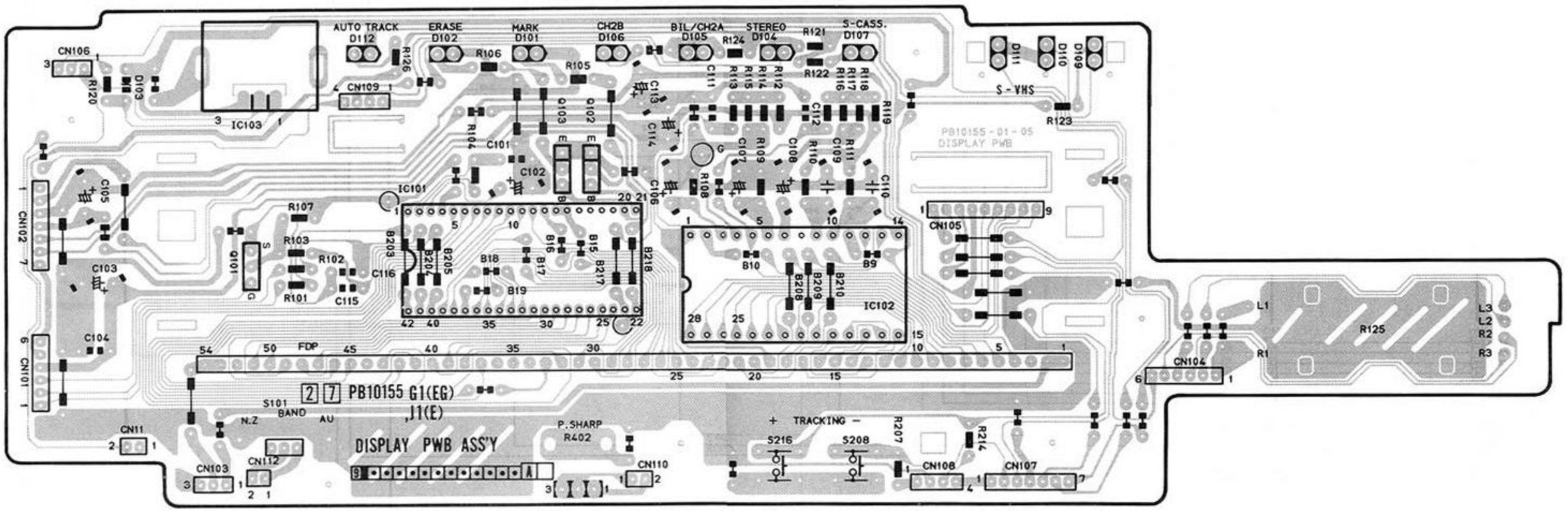


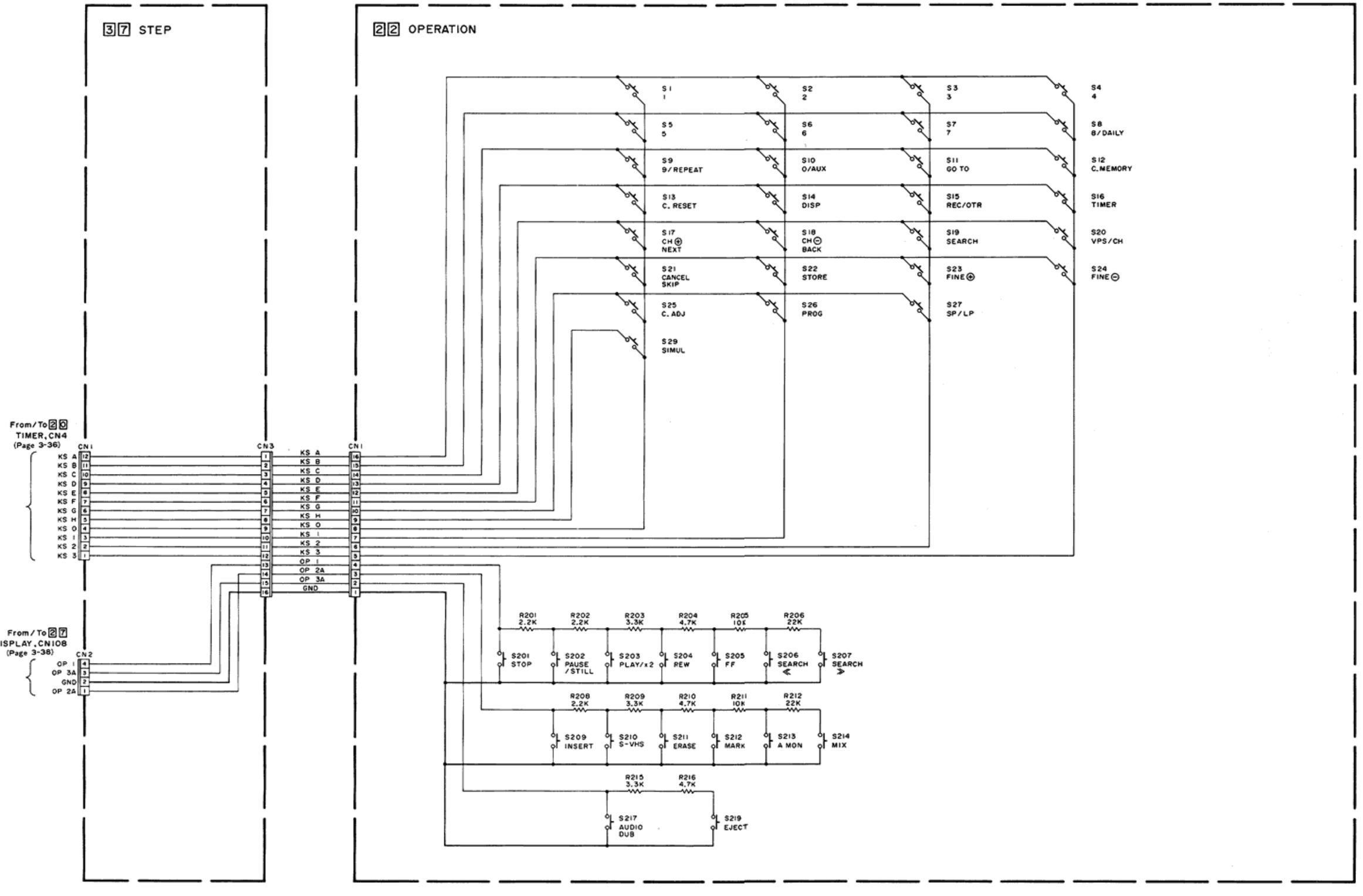
3.36 DISPLAY SCHEMATIC DIAGRAM



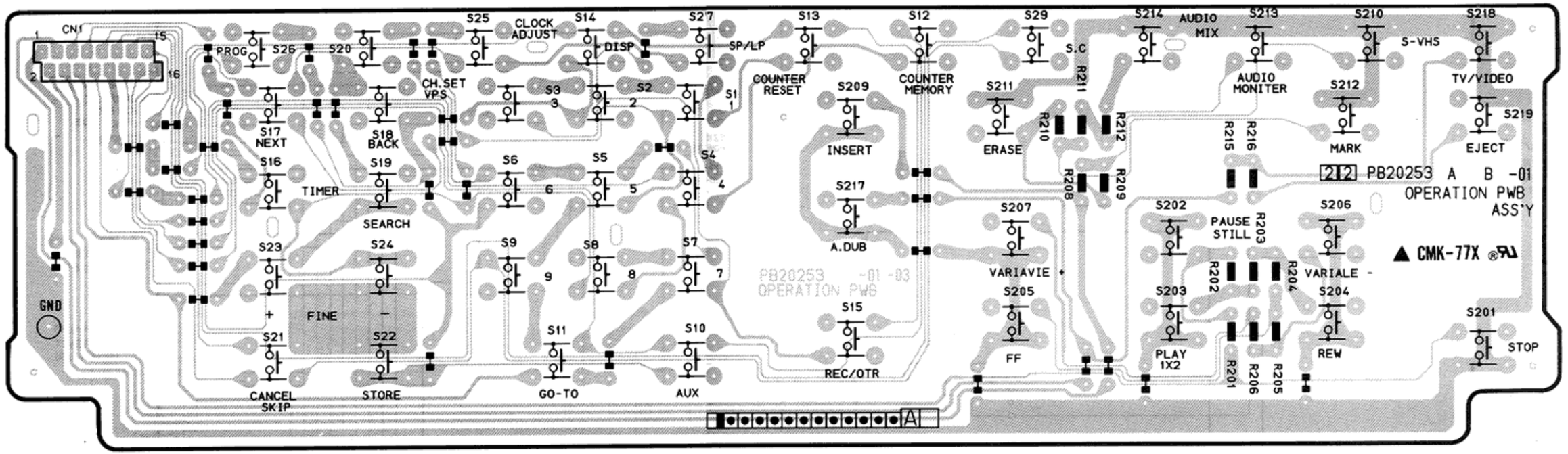
Note: Voltages are DC-measured with a digital voltmeter during stop and tuner mode.

3.37 DISPLAY CIRCUIT BOARD

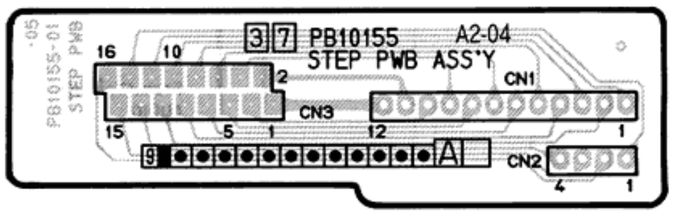



37 STEP
22 OPERATION
S1 1
S2 2
S3 3
S4 4
S5 5
S6 6
S7 7
S8 8/DAILY
S9 9/REPEAT
S10 0/AUX
S11 GO TO
S12 C.MEMORY
S13 C. RESET
S14 DISP
S15 REC/OTR
S16 TIMER
S17 CH⊕ NEXT
S18 CH⊖ BACK
S19 SEARCH
S20 VPS/CH
S21 CANCEL SKIP
S22 STORE
S23 FINE⊕
S24 FINE⊖
S25 C. ADJ
S26 PROG
S27 SP/LP
S29 SIMUL
From/To 20 TIMER, CN4 (Page 3-36)
CN1
KS A
KS B
KS C
KS D
KS E
KS F
KS G
KS H
KS 0
KS 1
KS 2
KS 3
CN3
CN1
OP 1
OP 2A
OP 3A
GND
From/To 27 DISPLAY, CN108 (Page 3-38)
CN2
R201 2.2K
R202 2.2K
R203 3.3K
R204 4.7K
R205 10K
R206 22K
S201 STOP
S202 PAUSE /STILL
S203 PLAY/x2
S204 REW
S205 FF
S206 SEARCH ≪
S207 SEARCH ≫
R208 2.2K
R209 3.3K
R210 4.7K
R211 10K
R212 22K
S209 INSERT
S210 S-VHS
S211 ERASE
S212 MARK
S213 A MON
S214 MIX
R215 3.3K
R216 4.7K
S217 AUDIO DUB
S219 EJECT

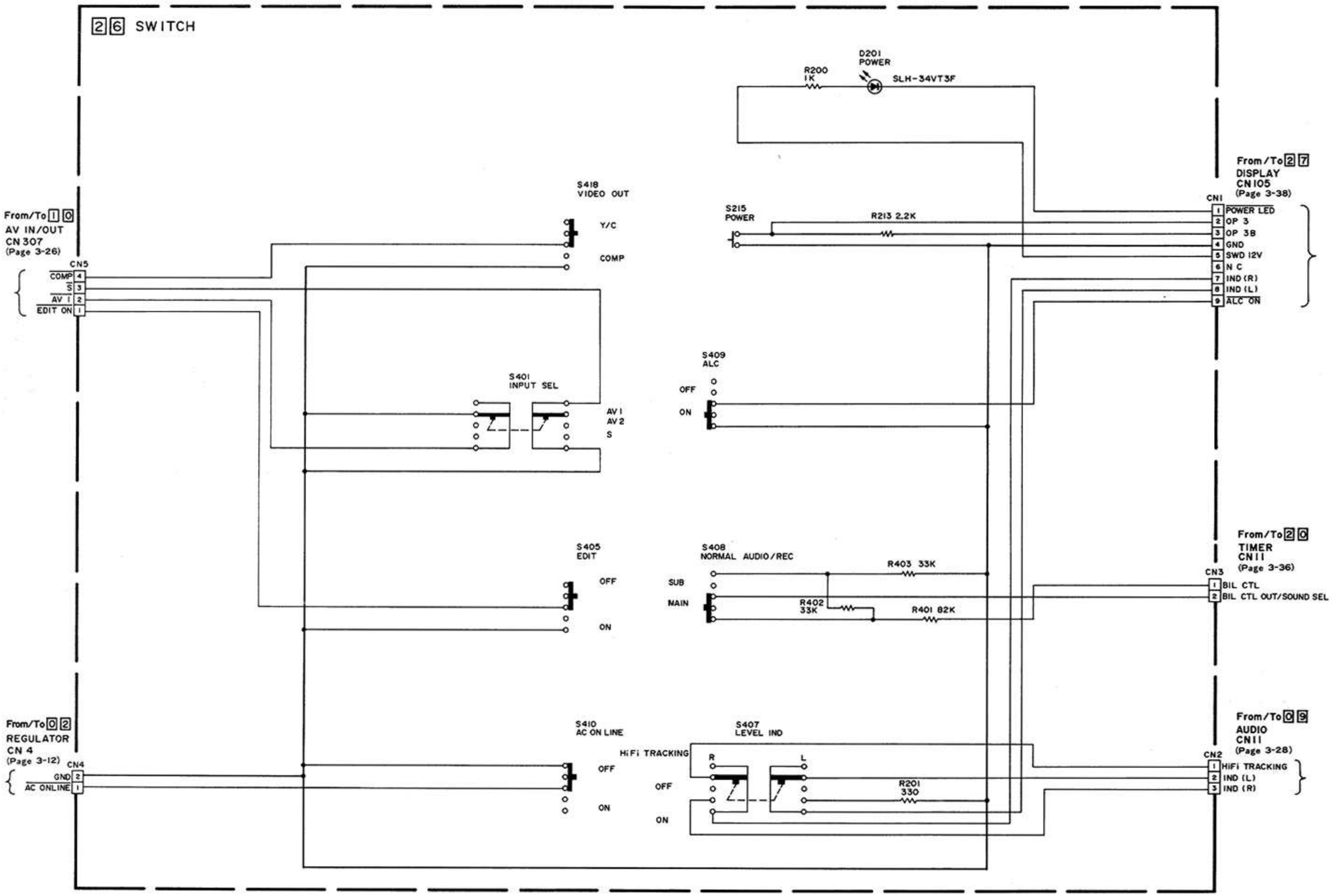
– OPERATION –



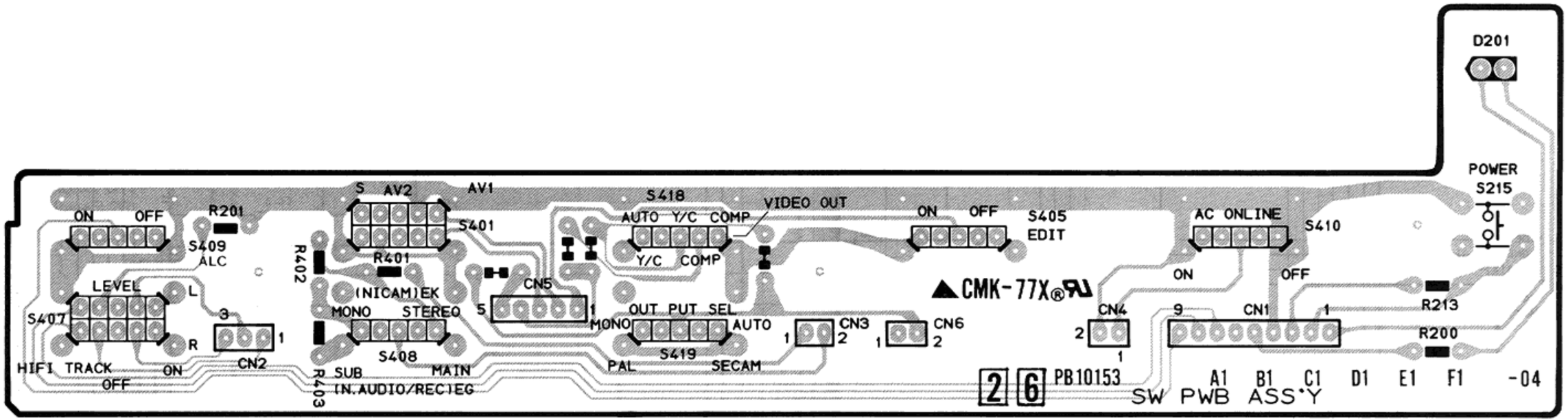
– STEP –



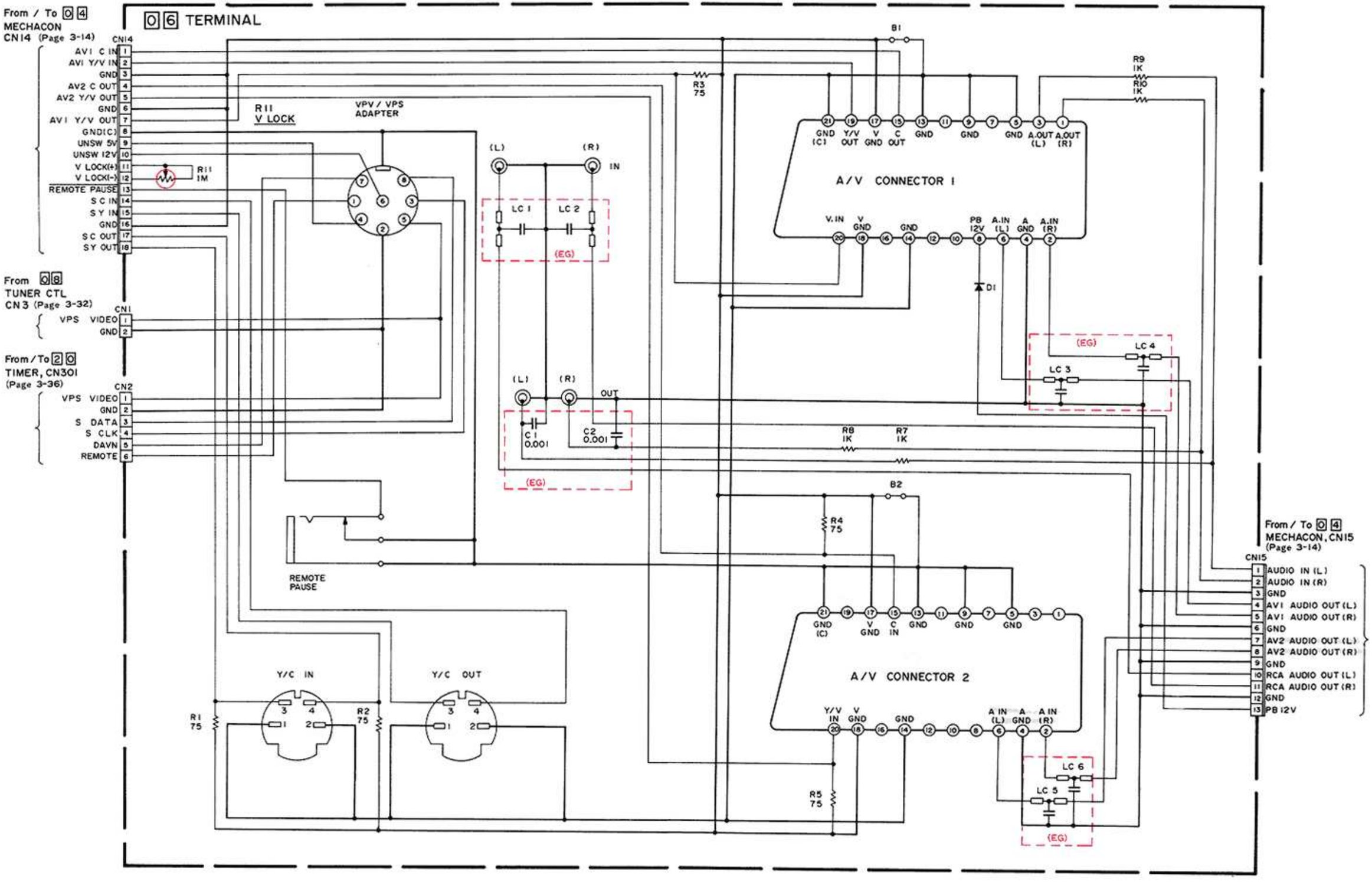
3.40 SWITCH SCHEMATIC DIAGRAM



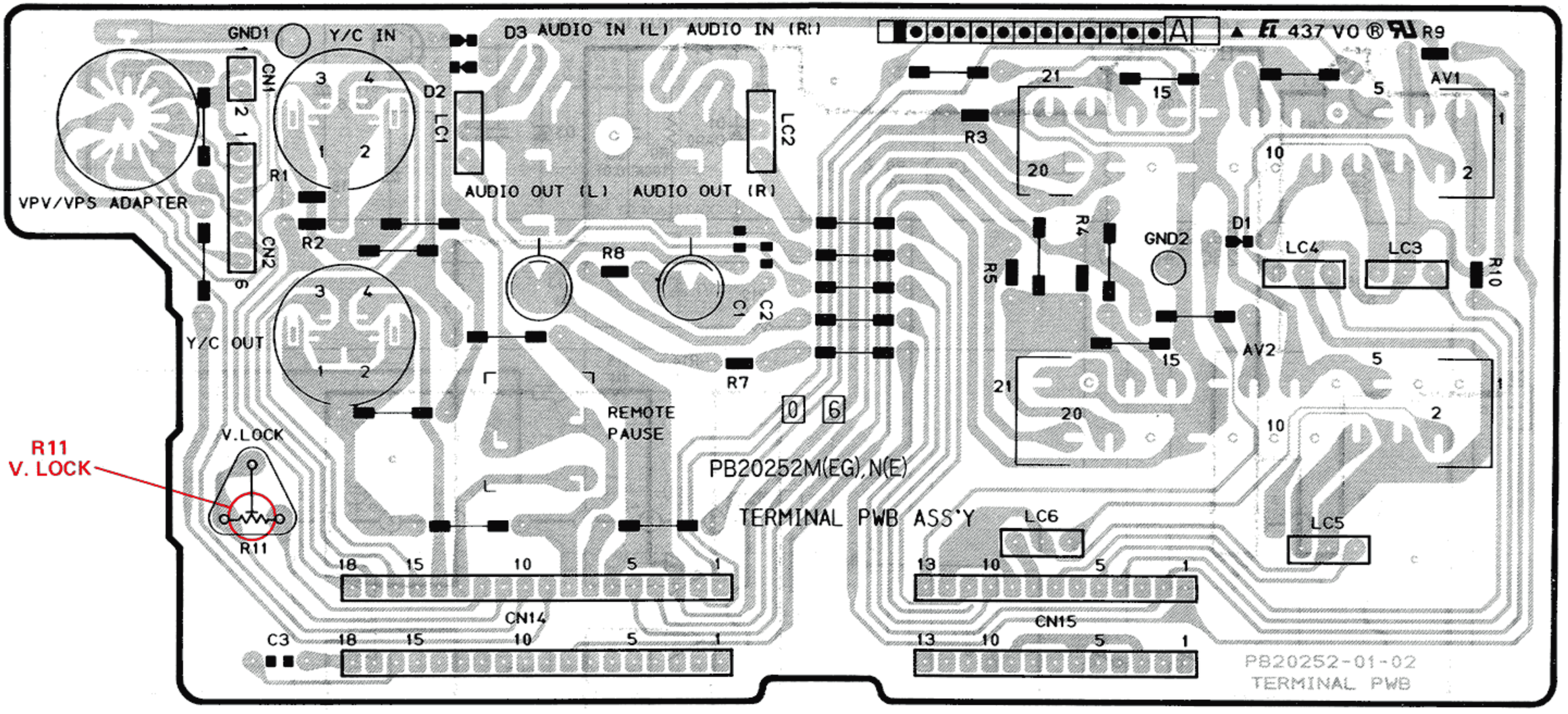
3.41 SWITCH CIRCUIT BOARD

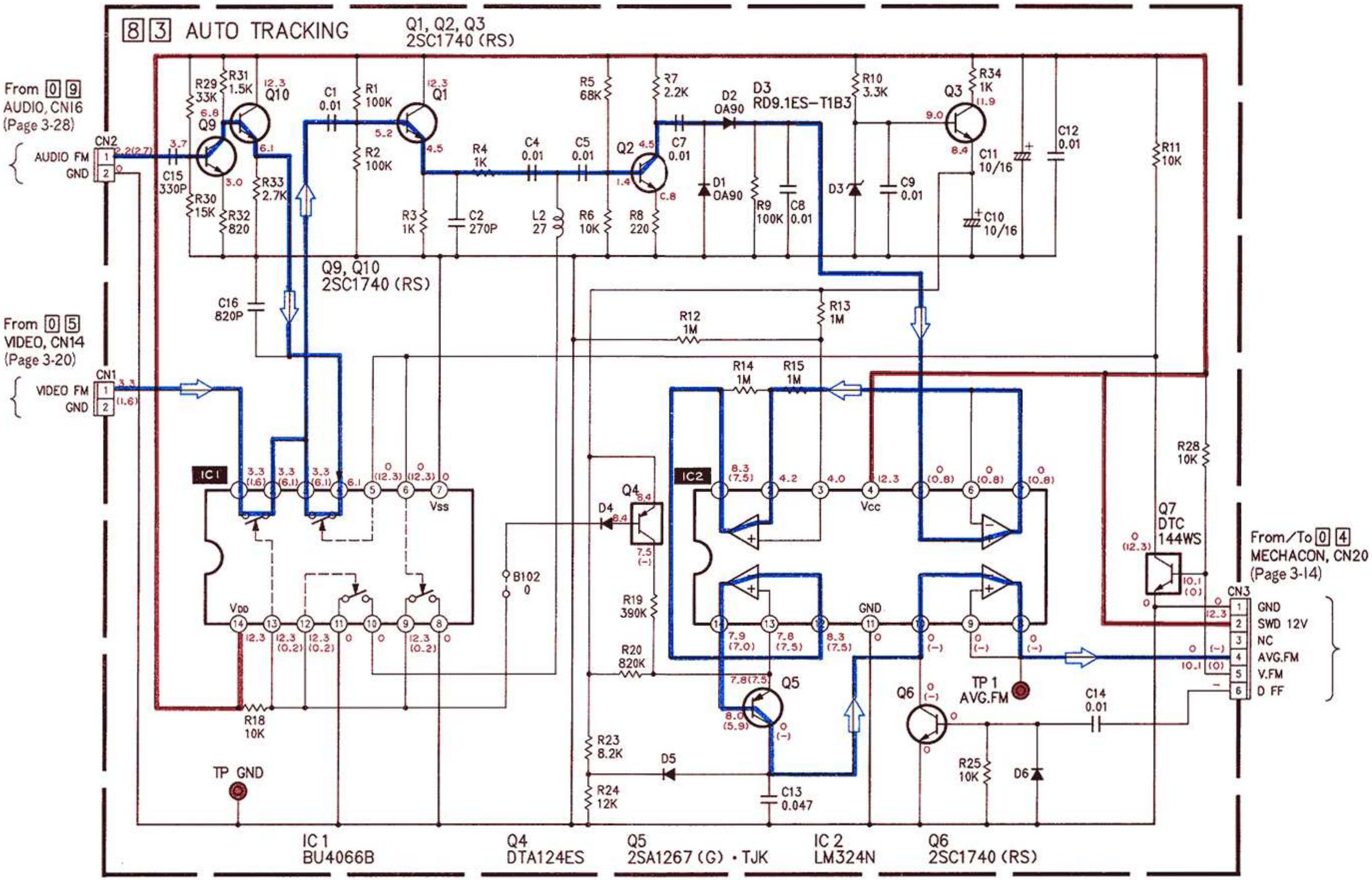


3.42 TERMINAL SCHEMATIC DIAGRAM

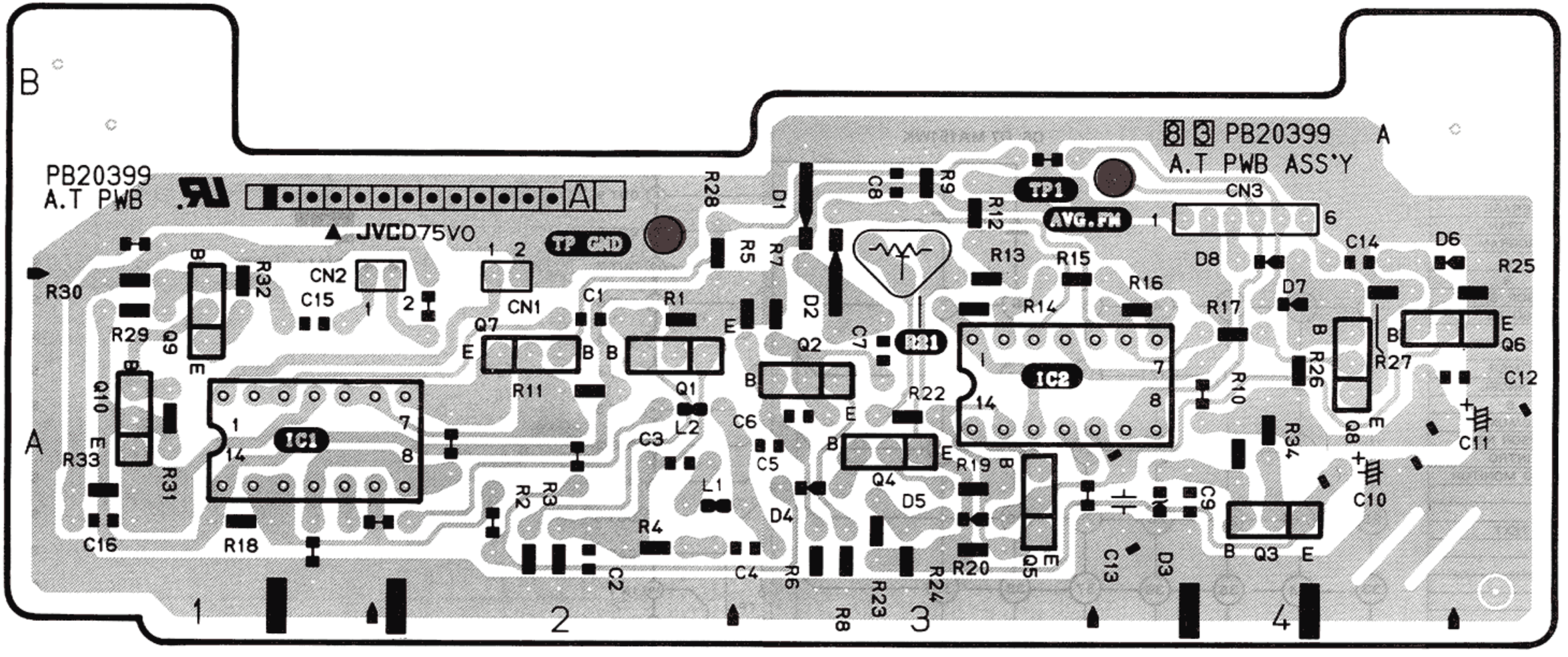


3.43 TERMINAL CIRCUIT BOARD




8 3 AUTO TRACKING
Q1, Q2, Q3
2SC1740 (RS)
From 0 9
AUDIO, CN16
(Page 3-28)
AUDIO FM
GND
CN2
C15 330P
R29 33K
R31 1.5K
Q10
Q9
R30 15K
R32 820
R33 2.7K
C1 0.01
R1 100K
R2 100K
Q1
R3 1K
C2 270P
R4 1K
C4 0.01
L2 27
C5 0.01
R5 68K
R6 10K
Q2
R8 220
R7 2.2K
C7 0.01
D2 OA90
D3 RD9.1ES-T1B3
D1 OA90
R9 100K
C8 0.01
D3
C9 0.01
R10 3.3K
Q3
R34 1K
C11 10/16
C10 10/16
C12 0.01
R11 10K
Q9, Q10
2SC1740 (RS)
C16 820P
From 0 5
VIDEO, CN14
(Page 3-20)
VIDEO FM
GND
CN1
R12 1M
R13 1M
R14 1M
R15 1M
IC1
Vss
Vdd
B102
R18 10K
TP GND
IC2
Vcc
GND
Q4
D4
R19 390K
R20 820K
Q5
R23 8.2K
D5
R24 12K
C13 0.047
Q6
TP 1
AVG.FM
C14 0.01
R25 10K
D6
R28 10K
Q7
DTC
144WS
From/To 0 4
MECHACON, CN20
(Page 3-14)
CN3
GND
SWD 12V
NC
AVG.FM
V.FM
D FF
IC 1
BU4066B
Q4
DTA124ES
Q5
2SA1267 (G) · TJK
IC 2
LM324N
Q6
2SC1740 (RS)

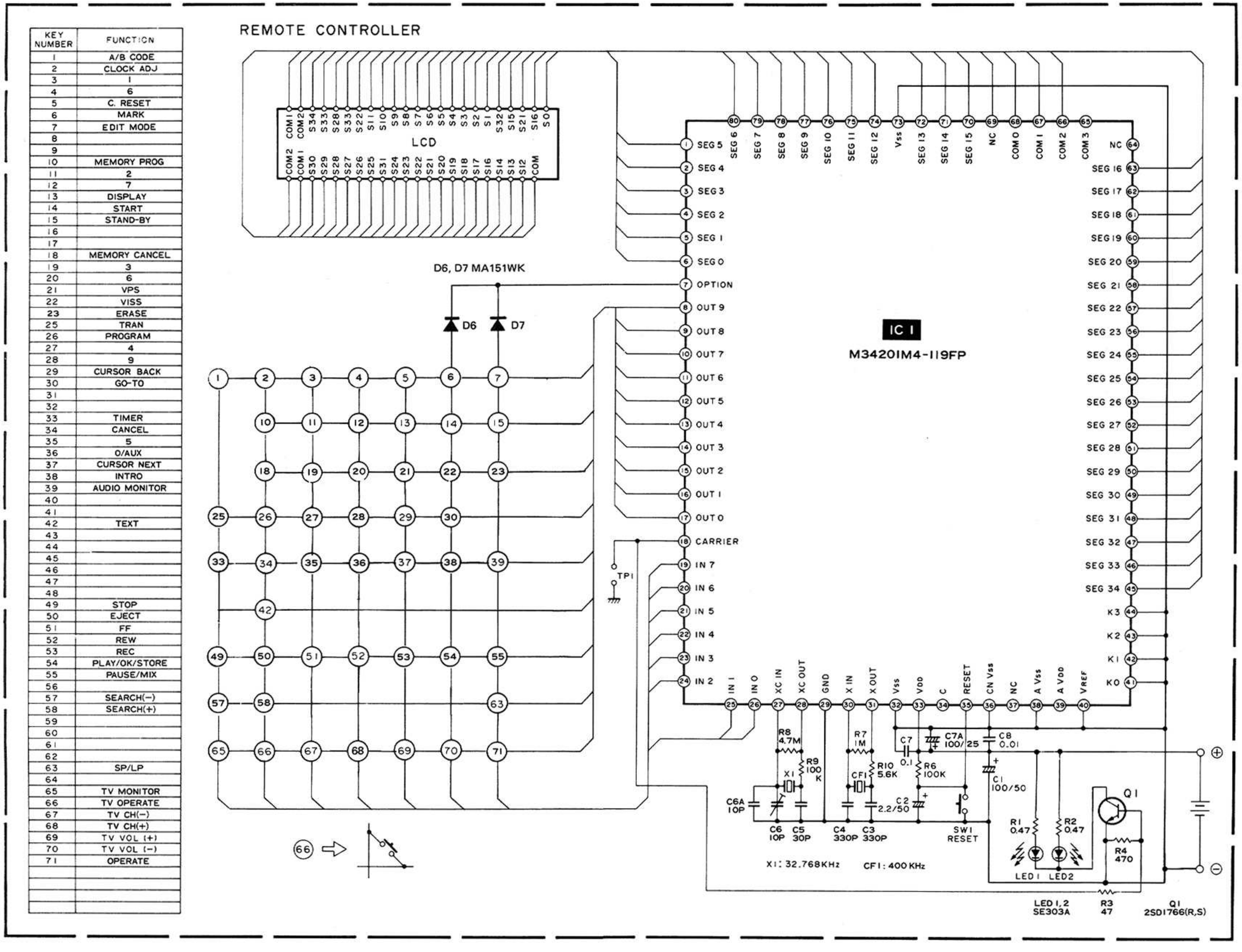
3.45 AUTO TRACKING CIRCUIT BOARD



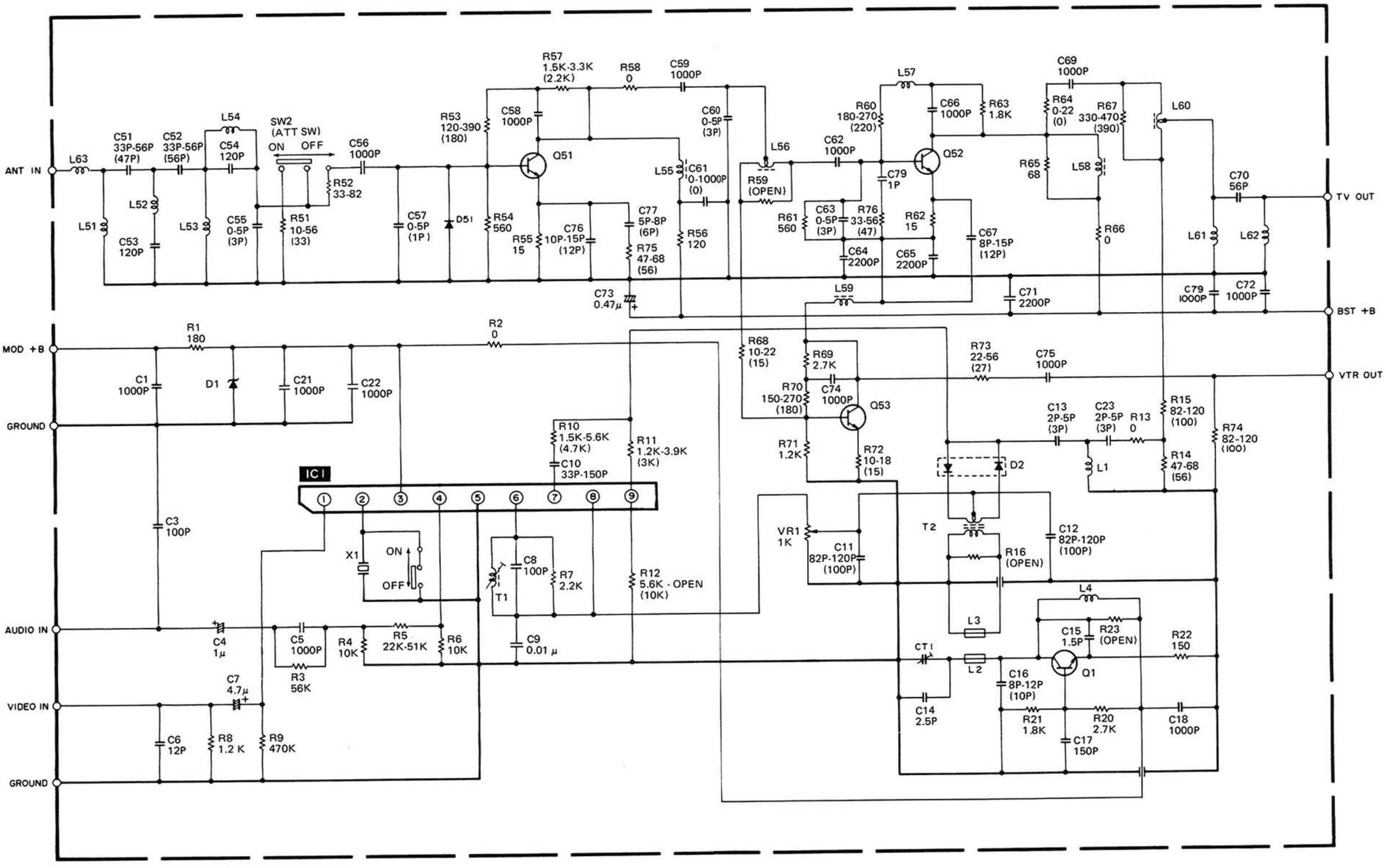
3.46 REMOTE CONTROL SCHEMATIC DIAGRAM

Notes: 1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.

KEY NUMBER	FUNCTION
1	A/B CODE
2	CLOCK ADJ
3	1
4	6
5	C. RESET
6	MARK
7	EDIT MODE
8	
9	
10	MEMORY PROG
11	2
12	7
13	DISPLAY
14	START
15	STAND-BY
16	
17	
18	MEMORY CANCEL
19	3
20	6
21	VPS
22	VISS
23	ERASE
25	TRAN
26	PROGRAM
27	4
28	9
29	CURSOR BACK
30	GO-TO
31	
32	
33	TIMER
34	CANCEL
35	5
36	0/AUX
37	CURSOR NEXT
38	INTRO
39	AUDIO MONITOR
40	
41	
42	TEXT
43	
44	
45	
46	
47	
48	
49	STOP
50	EJECT
51	FF
52	REW
53	REC
54	PLAY/OK/STORE
55	PAUSE/MIX
56	
57	SEARCH(−)
58	SEARCH(+)
59	
60	
61	
62	
63	SP/LP
64	
65	TV MONITOR
66	TV OPERATE
67	TV CH(−)
68	TV CH(+)
69	TV VOL (+)
70	TV VOL (−)
71	OPERATE


REMOTE CONTROLLER
LCD
COM1 COM2 S34 S33 S28 S33 S22 S11 S10 S9 S8 S7 S6 S5 S4 S3 S2 S1 S32 S15 S21 S16 S0
COM2 COM1 S30 S29 S28 S27 S26 S25 S31 S24 S23 S22 S21 S20 S19 S18 S17 S16 S14 S13 S12 COM
D6, D7 MA151WK
D6
D7
TP1
IC 1
M34201M4-119FP
SEG 5 SEG 4 SEG 3 SEG 2 SEG 1 SEG 0 OPTION OUT 9 OUT 8 OUT 7 OUT 6 OUT 5 OUT 4 OUT 3 OUT 2 OUT 1 OUT 0 CARRIER IN 7 IN 6 IN 5 IN 4 IN 3 IN 2
SEG 6 SEG 7 SEG 8 SEG 9 SEG 10 SEG 11 SEG 12 Vss SEG 13 SEG 14 SEG 15 NC COM 0 COM 1 COM 2 COM 3 NC
SEG 16 SEG 17 SEG 18 SEG 19 SEG 20 SEG 21 SEG 22 SEG 23 SEG 24 SEG 25 SEG 26 SEG 27 SEG 28 SEG 29 SEG 30 SEG 31 SEG 32 SEG 33 SEG 34 K3 K2 K1 K0
IN 1 IN 0 XC IN XC OUT GND X IN X OUT Vss VDD C RESET CN Vss NC A Vss A VDD VREF
R8 4.7M
R9 100 K
X1
C6A 10P
C6 10P
C5 30P
R7 1M
R10 5.6K
CF1
C4 330P
C3 330P
C7 0.1
C7A 100/25
C8 0.01
R6 100K
C2 2.2/50
C1 100/50
SW1 RESET
Q1
R1 0.47
R2 0.47
R4 470
LED1 LED2
X1: 32.768KHz
CF1: 400 KHz
LED 1, 2 SE303A
R3 47
Q1 2SD1766(R,S)

3.47 RF CONVERTER SCHEMATIC DIAGRAM



NOTES:

1. All parts slown in this schematic are critical for safety.
2. This schematic is only for reference.
   Avoid replacing individual parts.
   Replace the entire unit only.

SECTION 4
EXPLODED VIEWS AND PARTS LIST

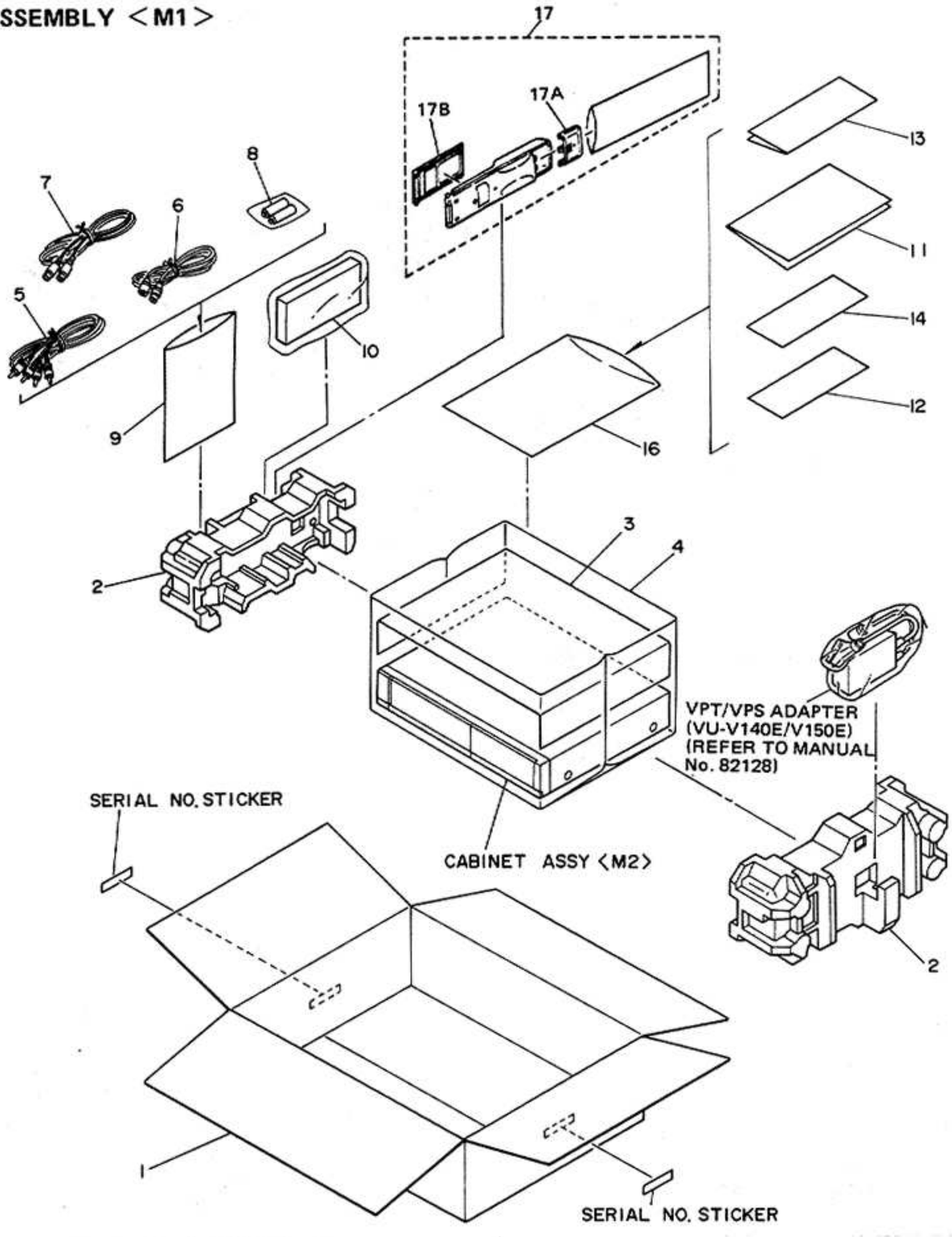
SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

NOTE:

[M] indicates mechanical symbol number.

4.1 PACKING ASSEMBLY <M1>

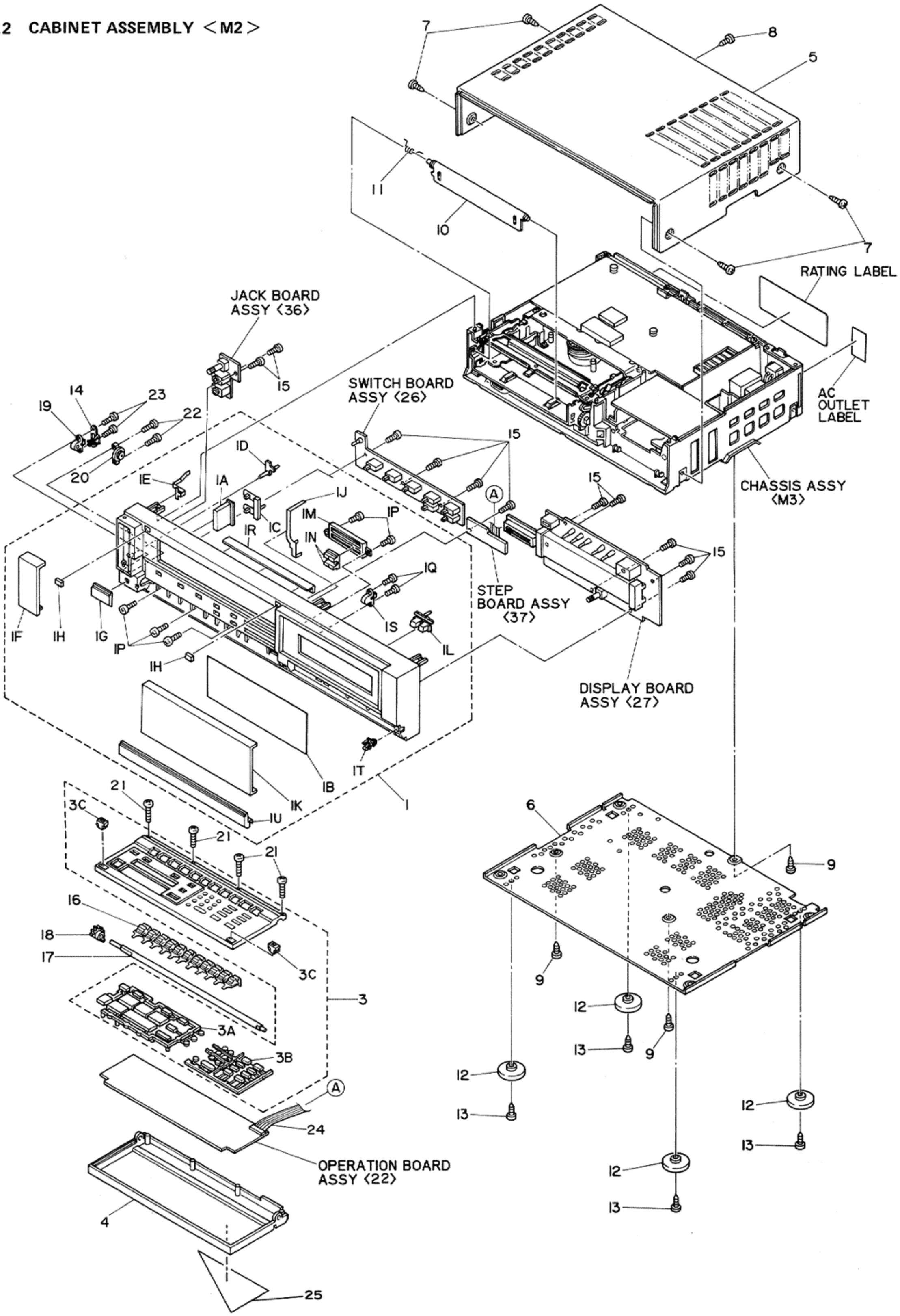


#⚠	REF No.	PART No.	PART NAME, DESCRIPTION

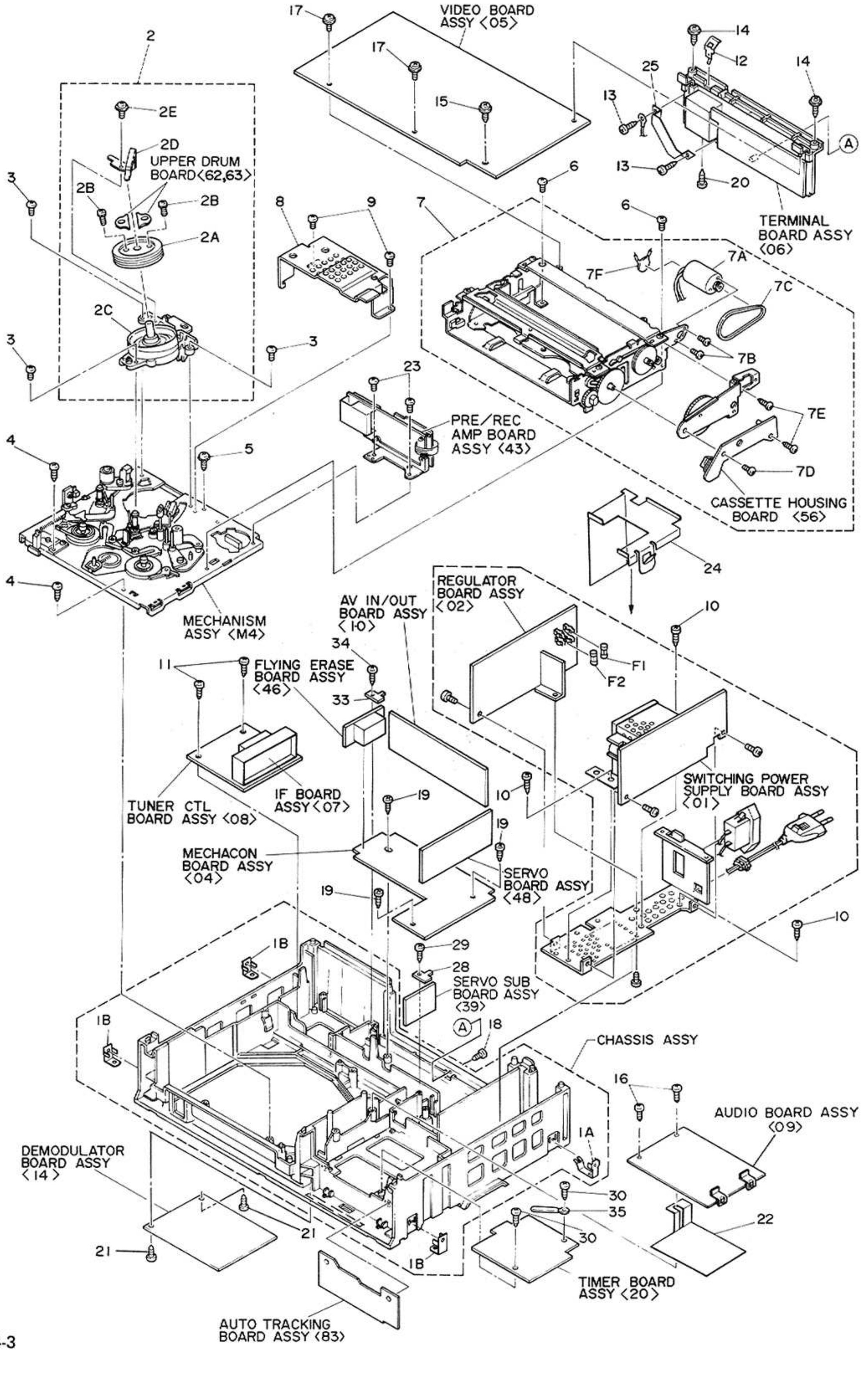
1. PACKING ASSEMBLY ⟨M1⟩

	1	PQ32582-18	PACKING CASE, EG
	1	PQ32582-19	PACKING CASE, E
	2	PQ32999A	CUSHION ASSY
	3	PU57777	WADDING PAPER
	4	PQM30021-70	POLY BAG
	5	PU56142-3	PIN CORD ASSY
	or	PU56142-5	PIN CORD ASSY
	6	PU59168-3	RF CABLE
	or	PU59167-3	RF CABLE
	7	PU60111	S CABLE
	or	PU61113	S CABLE
	8	UM-3DJ2P	BATTERY, 2 CELLS
	9	QPGA020-02005	POLY BAG
	10	SE-180P	CASSETTE TAPE
⚠	11	PU30425-1081	INSTRUCTIONS, EG
⚠	11	PU30425-1082	INSTRUCTIONS, E
	12	TCN-3379	TAPE CATALOG
	13	BT-20114	WARRANTY CARD, EG
⚠	14	—	DBP INF SHEET, EG
	16	QPGA025-03505	POLY BAG
⚠	17	PQ10779AC	REMOTE CONTROLLER, EG
⚠	17	PQ10779AD	REMOTE CONTROLLER, E
	17A	PQ32715	BATTERY CAP
	17B	PQ32901B	DOOR ASSY, EG
	17B	PQ32901D	DOOR ASSY, E

4.2 CABINET ASSEMBLY <M2>



4.3 CHASSIS ASSEMBLY <M3>



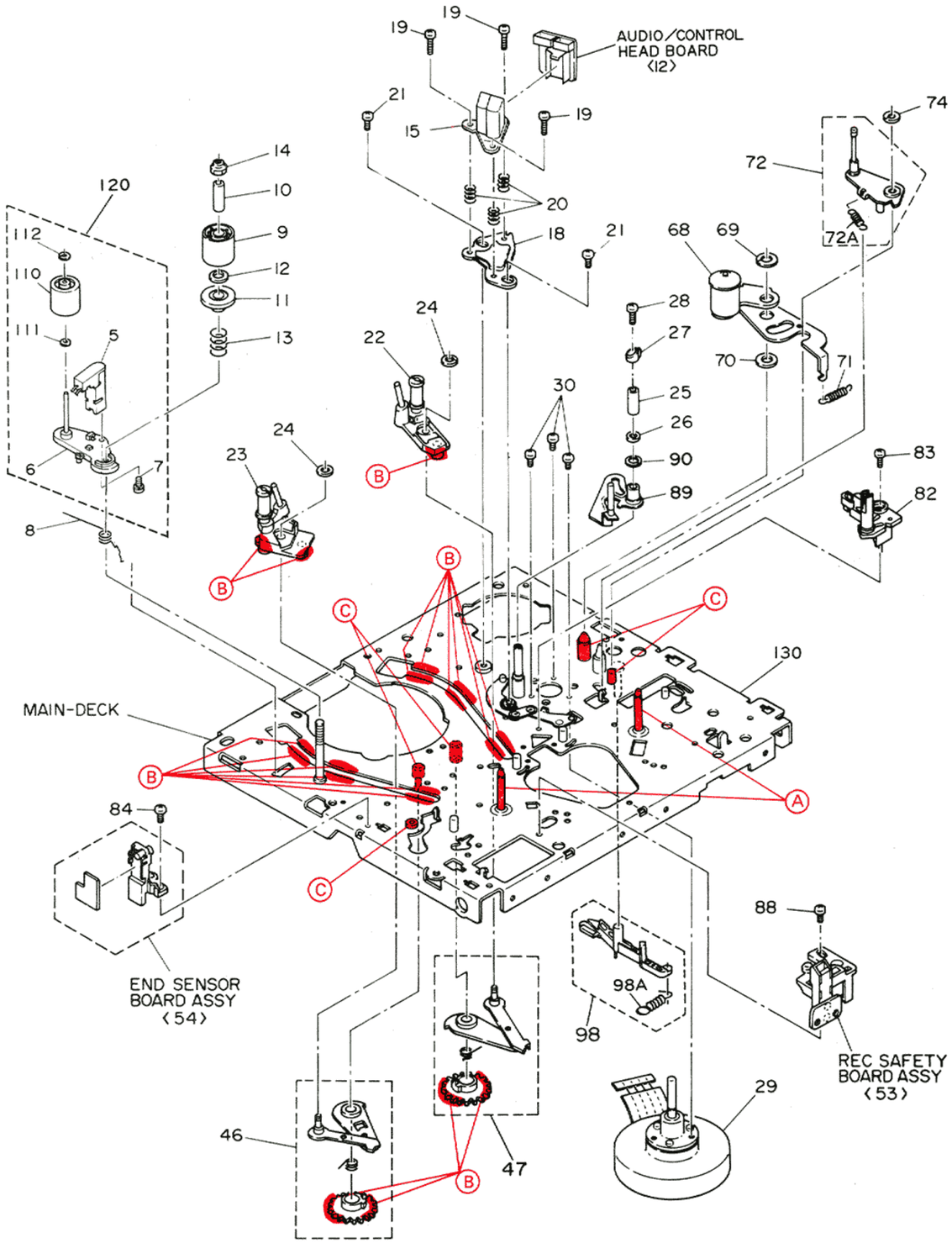
2. CABINET ASSEMBLY ⟨M2⟩

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
1	PQ10668Q	FRONT PANEL ASSY, EG
1	PQ10668R	FRONT PANEL ASSY, E
1A	PQ32347-3	BUTTON (POWER)
1B	PQ32499-13	DISPLAY SHEET, E
1B	PQ32499-12	DISPLAY SHEET, EG
1C	PQ43395	HINGE (POWER)
1D	PQ43394	IND (POWER)
1E	PQ43487	EARTH PLATE
1F	PQ32351-12	COVER (JACK), E
1F	PQ32351-11	COVER (JACK), EG
1G	PQ32348-6	COVER
1H	PQ43363	PLATE (MAGNET), X2
1J	PQ32395-1-2	EARTH PLATE
1K	PQ32485	D.WINDOW
1L	PQ43455	BUTTON (TR)
1M	PQ32352	GUIDE (SLIDE)
1N	PQ32353	KNOB (SLIDE), X2
1P	SDSF2606Z	SCREW, X5
1Q	SDSF2608Z	SCREW, X2
1R	PQ32571	PLATE (FRONT)
1S	PQ43467	HOLDER
1T	PU60109	CATCHER
1U	PQ32462N	DOOR ASSY, E
1U	PQ32462M	DOOR ASSY, EG
3	PQ20710H	DOOR ASSY (UPPER), E
3	PQ20710G-3	DOOR ASSY (UPPER), EG
3A	PQ32534-4	BUTTON (1), EG
3A	PQ32534-5	BUTTON (1), E
3B	PQ32518-5	BUTTON (2), EG
3B	PQ32518-6	BUTTON (2), E
3C	PU59891-2	MAGNET ASS'Y, X2
4	PQ20666Q	DOOR ASSY (LOWER), EG
4	PQ20666R-9	DOOR ASSY (LOWER), E
⚠ 5	PQ10545-15	TOP COVER
⚠ 6	PQ10579	BOTTOM COVER
7	SDSA4014M	TAPPING SCREW, X4
8	SDSF3010M	TAPPING SCREW
9	SDSF3008Z	TAPPING SCREW, X3
10	PQ31819-22	CASSETTE HOUSING DOOR
11	PQ42410-1-1	TORSION SPRING
12	PQ43631A	FOOT ASS'Y, X4
13	SDSF3012Z	TAPPING SCREW, X4
14	PQ43704-1-1	SPRING
15	SDSF2608Z	TAPPING SCREW, X11
16	PQ32519-3	BUTTON (3)
17	PQ32362-1-2	SHAFT
18	PQ43470	GEAR
19	PQ43467	HOLDER
20	PU60527	DAMPER UNIT
21	SPSF2008M	TAPPING SCREW, X4
22	SDSF2010Z	TAPPING SCREW, X2
23	SDSF2608Z	TAPPING SCREW, X2
24	PQ32556	FPC
25	PU36524	STICKER, EG
25	PU36524-2	STICKER, E

3. CHASSIS ASSEMBLY ⟨M3⟩

≠⚠ REF No.	PART No.	PART NAME, DESCRIPTION
1A	PQ43023-2	EARTH PLATE
1B	PQ43011	EARTH PLATE, X3, EG
⚠ 2	PDV2146A	DRUM ASSY
2A	PDM2119A	UPPER DRUM ASSY
2B	PDM4165A	DRUM SCREW ASSY, X2
2C	PDM2113C	LOWER DRUM MOTOR ASSY
2D	PDM4015B	BRUSH ASSY
2E	LPSP2606Z	SCREW
3	SDSP2608Z	SCREW, X3, DRUM
4	PQ43831-2	SPECIAL SCREW, X2, M. DECK
5	PQ43831-2	SPECIAL SCREW, M. DECK
6	SDST2605Z	TAPPING SCREW, X2, C. HOUSING
7	PUS28277H	CASSETTE HOUSING ASSY
⚠ 7A	PQ42385A	CASSETTE MOTOR ASSY
⚠ or	PQ42385B	CASSETTE MOTOR ASSY
7B	SPSP2603Z	SCREW, X2
7C	PQM30003-19	BELT (CASSETTE MOTOR)
7D	SPSP2604Z	SCREW
7E	SPST2605Z	TAPPING SCREW, X2
7F	DV710SR223M16	VARISTOR
8	PQ31171-5	DRUM SHIELD
9	SDST2605Z	TAPPING SCREW, X2, D.SHIELD
10	PQ43831-2	SPECIAL SCREW, X3, TRANS BKT
11	SDSF3008Z	TAPPING SCREW, X2, TUNER BOARD
12	PQ43012-1-1	EARTH PLATE, RF.CONV
13	SDSF2608Z	TAPPING SCREW, X2, RF. CONV
14	GPSF2610Z	TAPPING SCREW, X2, TERM. BOARD
15	GPSF2610Z	TAPPING SCREW, VIDEO BOARD
16	SDSF3008Z	TAPPING SCREW, X2, AUDIO BOARD
17	PQ44003	SCREW, X2, VIDEO BOARD
18	SDSF3010M	TAPPING SCREW, TERMINAL BOARD
19	SDSF3008Z	TAPPING SCREW, X3, M CTL BOARD
20	SDST2605Z	TAPPING SCREW, RF.CONV
21	SDSF3008Z	TAPPING SCREW, X2, DEMOD BOARD
22	PQ32255A	SHIELD PLATE ASSEMBLY
23	SDST2605Z	TAPPING SCREW, X2, PRE/REC
⚠ 24	PQ32578	COVER (AC), SW.REG
25	PQ43683	BRACKET (RF)
28	PQ43714	BRACKET (FE), SERVO SUB
29	SDSF3008Z	TAPPING SCREW, SERVO SUB
30	SDSF3008Z	TAPPING SCREW, X2, TIMER
33	PQ43714	BRACKET (FE), F.E BOARD
34	SDSF3008Z	TAPPING SCREW, F.E BOARD
35	PU49485-4	WIRE CLAMP

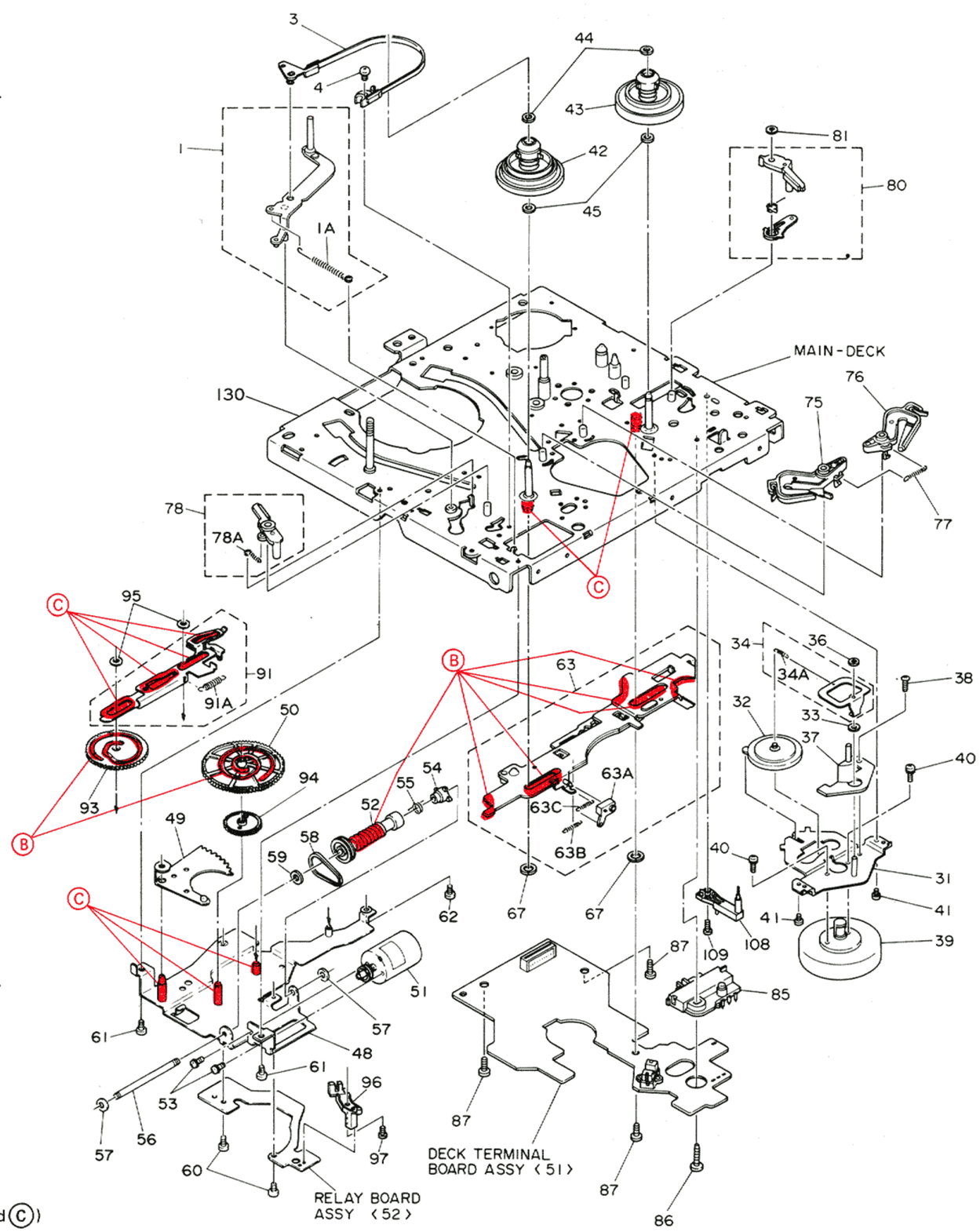
4.4 MECHANISM ASSEMBLY (1) < M4 >



Category	Part number	Mark
Oil	COSMO-HV56	Ⓐ
Grease (Black)	MOS2-C	Ⓑ
Grease (Ivory)	DAPHNE-XLA-2	Ⓒ

NOTE: The section marked in red (Ⓐ, Ⓑ and Ⓒ) indicate lubrication and greasing areas.

MECHANISM ASSEMBLY (2) < M4 >



4. MECHANISM ASSEMBLY ⟨M4⟩

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	1	PQ43710A	TENSION ARM ASSY
	1A	PQ41952-5	SPRING
	3	PQ41948A	TENSION BAND ASSY
	4	SDST2606Z	TAPPING SCREW
	5	PU60646	FULL ERASE HEAD
	6	PQ43299A	FULL ERASE HEAD SUB ASSY
	7	LPSP2004Z	SCREW
	8	PQ41954-1-1	TORSION SPRING
	9	PQ41955	IMPEDANCE ROLLER
	10	PQ41956	COLLAR
	11	PQ41957	LOWER FLANGE
	or	PQ42958	LOWER FLANGE
	12	PQM30018-39	SPACER
	or	PQM30018-50	SPACER
	13	PQM30002-124	COMPRESSION SPRING
	14	PQ40353	NYLON NUT
	15	PU60560-2	AUDIO/CONTROL HEAD
	18	PQ42984-2	HEAD BASE
	19	PQ43687A	SPECIAL SCREW, X3
	20	PU30080-49	SPRING, X3
	21	SDSP2606Z	SCREW,X2
	22	PU60557-1-4	POLE BASE ASSY (TAKE-UP)
	or	PU59994	POLE BASE ASSY (TAKE-UP)
	23	PU60556-1-2	POLE BASE ASSY (SUPPLY)
	or	PU59993	POLE BASE ASSY (SUPPLY)
	24	PQM30017-5	SLIT WASHER, X2
	25	PU53629-3	TAPE GUIDE
	26	PQ40268-2	GUIDE FLANGE
	27	PQ42999-2-1	G. POLE CAP
	28	SDSP2006Z	SCREW
⚠	29	PU60201V	CAPSTAN MOTOR
	30	SPSP2605N	SCREW, X3
	31	PQ41974A-3	REEL MOTOR BRACKET ASSY
	32	PU58645-1-4	IDLER ARM
	33	Q03093-834	WASHER
	34	PQ41976A-1	SPRING ARM ASSY
	34A	PQ42212-1-4	SPRING
	36	PQM30017-22	SLIT WASHER
	37	PQ41978	HOLDER
	38	SPST2606Z	SCREW
⚠	39	PU59926V	REEL MOTOR
	40	LPSP2604Z	SCREW, X2
	41	SPST2606Z	SCREW, X2
	42	PU59250-1-2	REEL DISK (SUPPLY)
	43	PU58638-1-2	REEL DISK (TAKE-UP)
	44	PQM30017-5	SLIT WASHER, X2
	45	Q03093-828	WASHER, X2
	46	PQ41979A-5	LOADING ARM ASSY (SUPPLY)
	47	PQ41985B-3	LOADING ARM ASSY (TAKE-UP)
	48	PQ42973A	CAM BRACKET ASSY
	49	PQ41994A-3	ARM GEAR ASSY
	50	PQ20577	CONTROL CAM
	51	PQ41996B	MODE MOTOR ASSY
	or	PQ41996C	MODE MOTOR ASSY

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	52	PQ41998A	WORM ASSY
	53	LPSP2604Z	SCREW, X2
	54	PQ42001	WINDMILL
	55	PQ42002	CLUTCH SPRING
	56	PQ42003	WORM SHAFT
	57	PQM30017-5	SLIT WASHER, X2
	58	PQM30003-20	BELT (MODE MOTOR)
	59	PQM30018-22	SPACER
	60	SPST2606Z	SCREW, X2
	61	SPST2606Z	SCREW, X2
	62	LPSP2604Z	SCREW
	63	PQ42038C	PLATE ASSY
	63A	PQ31044-1-2	LOCK LEVER
	63B	PQM30001-223	TENSION SPRING
	63C	PQM30001-211	TENSION SPRING
	67	PQM30017-28	SLIT WASHER, X2
	68	PQ42006B	PINCH ROLLER ARM ASSY
	69	PQM30017-28	SLIT WASHER
	70	Q03093-833	WASHER
	71	PQM30001-229	TENSION SPRING
	72	PQ42013B-4	GUIDE ARM ASSY
	72A	PQ42029	SPRING
	74	PQM30017-6	SLIT WASHER
	75	PQ42019B-6	MAIN BRAKE ASSY (SUPPLY)
	76	PQ42020B	MAIN BRAKE ASSY (TAKE-UP)
	77	PQM30001-216	TENSION SPRING
	78	PQ42021A-3	SUB BRAKE ASSY (SUPPLY)
	78A	PQ42023-1-2	TENSION SPRING
	80	PQ42037A-2	SUB BRAKE ASSY (TAKE-UP)
	81	PQM30017-6	SLIT WASHER
	82	PU59925-1-1	LED HOLDER
	83	SPST2606Z	SCREW
	84	SPST2606Z	SCREW
	85	PU60444	SLIDE SWITCH
	86	SDSP2610Z	SCREW
	87	SDSP2606Z	SCREW, X3
	88	SDST2606Z	TAPPING SCREW
	89	PQ42979A-2	HALF LOADING ARM ASSY
	90	PQM30017-29	SLIT WASHER
	91	PQ42974A	SLIDE CAM PLATE ASSY
	91A	PQM30001-224	SPRING
	93	PQ31677	HALF LOADING CAM
	94	PQ42963	SECOND GEAR
	95	PQM30017-24	SLIT WASHER, X2
	96	PU61088	REEL SENSOR (SUPPLY)
	97	LPSP2604Z	SCREW
	98	PQ43295A-1	MOTOR BRAKE ASSY
	98A	PQ43296	SPRING
	108	PU59919-1-1	CASSETTE SWITCH
	109	SDST2608Z	SCREW
	110	PQ43298A	ROLLER ASSY
	111	Q03093-829	WASHER
	112	PQM30017	SLIT WASHER
	120	PQ43330B	FE HEAD ASSY
	130	PQ20248H-20	MECHANISM DECK ASSY

SECTION 5
ELECTRICAL PARTS LIST

SAFETY PRECAUTION
Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION	

6. SW POWER SUPPLY BOARD ASSEMBLY ⟨01⟩⟨02⟩

	PWBA	PB10166A-03	SWITCH REG. BOARD ASSEMBLY, EG	
	PWBA	PB10166C-02	SWITCH REG. BOARD ASSEMBLY, E	
⚠	POC1	QMP3980-200	POWER CORD, E	
⚠	POC1	QMP4019-200	POWER CORD, EG	
⚠	AO1	QMC9021-001	AC OUTLET	
⚠	BKT1	PQ20531-1-2	TRANS BRACKET	
⚠	HD1	QHS3771-108	STRAIN RELIEF	
⚠	HS2	PQ43230	HEAT SINK (2), D11, D12	
	SCW1	DPSP3008Z	SCREW, X2, D11, D12	
	SCW2	DPSP3012Z	SCREW, X2	
	SCW3	SDST3006Z	SCREW, X3	
	SCW4	SBSB3008Z	SCREW, X3	
	SCW5	SBSB3006Z	SCREW, X2, IC3, IC101	
	SLD1	PQ32071	SHILD CASE(2)	
⚠	SPC1	PQ43773	SHEET(AC)	
⚠	F1	QMF51E2-1R25	FUSE 1.25A, AC250V	
⚠	F2	QMF51E2-2R0	FUSE 2.0A, AC250V	

— SWITCHING BOARD ASSEMBLY ⟨01⟩ —

PWBA1	PB10166C1-02	SWITCH P.S. BOARD, E	
PWBA1	PB10166A1-03	SWITCHING BOARD ASSEMBLY, EG	
IC1	STR-D1706	IC	
D1	10E6-F2	DIODE	
D2	10E6-F2	DIODE	
D3	10E6-F2	DIODE	
D4	10E6-F2	DIODE	
D5	RU1A	FR DIODE	
D6	RU1A	FR DIODE	

≠⚠	REF No.		PART No.	PART NAME, DESCRIPTION	
	D7		AU01Z	FR DIODE	
		or	ERA48-02-T	FR DIODE	
	D8		AU01Z	FR DIODE	
		or	ERA48-02-T	FR DIODE	
⚠	D9		AU01Z	FR DIODE	
⚠	D10		AU01Z	FR DIODE	
	D11		F6P20F	FR DIODE	
		or	FML-12S	FR DIODE	
	D12		F5KQ40B	BARRIER DIODE	
		or	FMB-24	BARRIER DIODE	
	D13		AU01Z	FR DIODE	
		or	ERA48-02-T	FR DIODE	
	D14		AU01Z	FR DIODE	
		or	ERA48-02-T	FR DIODE	
	D15		RD16ES-T1B2	ZENER DIODE	
	D28		AU01Z	FR DIODE	
	R1		QRZ0078-2R2	W.W.RESISTOR	2.2Ω
	R2		QRD181J-334	RESISTOR	330KΩ, 1/8W
	R3		QRD181J-334	RESISTOR	330KΩ, 1/8W
	R4		QRG029J-104	OMF RESISTOR	100KΩ, 2W
	R5		QRD161J-104	RESISTOR	100KΩ, 1/6W
	R6		QRG029J-201	OMF RESISTOR	200Ω, 2W
	R7		QRZ0078-R39	WW RESISTOR	0.39Ω
	R9		QVZ3507-101	V RESISTOR, SEMI REG 15V ADJ	100Ω
	R11		QRD161J-333	RESISTOR	33KΩ, 1/6W
⚠	C1		QFZ9022-473	MM CAPACITOR, E	0.047μF
⚠	C1		QFZ9022-683	MM CAPACITOR, EG	0.068μF
⚠	C2		QFZ9022-223	MM CAPACITOR, E	0.022μF
⚠	C7		QCZ9016-222M	CAPACITOR	0.0022μF
⚠		or	QCZ9048-222	CAPACITOR	0.0022μF
⚠	C8		QCZ9016-222M	CAPACITOR	0.0022μF
⚠		or	QCZ9048-222	CAPACITOR	0.0022μF
	C9		QED61HM-226	E CAPACITOR	22μF, 50V
	C10		QEZ0111-107	E CAPACITOR	100μF
	C11		QCY53AK-472	CAPACITOR	0.0047μF, 1000V
	C12		QCY43AK-121	CAPACITOR	120PF, 1000V
	C13		QFL41HJ-222	M CAPACITOR	0.0022μF, 50V
	C14		QFV41HJ-474	M CAPACITOR	0.47μF, 50V
	C15		QEZ0108-187Z	E CAPACITOR	180μF
⚠	C17		QCZ9016-102K	CAPACITOR, EG	0.001μF
⚠		or	QCZ9047-102	CAPACITOR, EG	0.001μF
⚠	C18		QCZ9016-102K	CAPACITOR, EG	0.001μF
⚠		or	QCZ9047-102	CAPACITOR, EG	0.001μF
⚠	C19		QCZ9016-102K	CAPACITOR, E	0.001μF
⚠		or	QCZ9047-102	CAPACITOR, E	0.001μF

≠⚠	REF No.		PART No.	PART NAME, DESCRIPTION	
⚠	C20		QCZ9016-102K	CAPACITOR, E	0.001μF
⚠		or	QCZ9047-102	CAPACITOR, E	0.001μF
	C31		QEZ0125-228	E CAPACITOR	2200μF
	C32		QEZ0106-338	E CAPACITOR	3300μF
	C33		QEZ0104-476Z	E CAPACITOR	47μF
	C34		QEZ0107-476Z	E CAPACITOR	47μF
	C35		QETB1EM-108	E CAPACITOR	1000μF, 25V
	C36		QETB1EM-108	E CAPACITOR	1000μF, 25V
	C37		QETB1AM-108	E CAPACITOR	1000μF, 10V
	C38		QETC1JM-226	E CAPACITOR	22μF, 63V
	C39		QETC1HM-226	E CAPACITOR	22μF, 50V
	C40		QFL41HJ-102	M CAPACITOR	0.001μF, 50V
	C41		QFL41HJ-102	M CAPACITOR	0.001μF, 50V
	L11		PU56183-330	CHOKE COIL	33μH
	L12		PU56183-330	CHOKE COIL	33μH
	L13		PU56183-330	CHOKE COIL	33μH
	L14		PU48530-101K	PEAKING COIL	100μH
	L15		PU48530-101K	PEAKING COIL	100μH
	L16		PU48530-8R2K	PEAKING COIL	8.2μH
	L17		PU48530-8R2K	PEAKING COIL	8.2μH
⚠	T1		PU60683	SW.TRANS	
⚠	HS1		PQ43231-1-1	HEAT SINK(3), FOR D11, D12	
⚠	HS2		PU60798	HEAT SINK	
⚠	LF2		PU60347	LINE FILTER	
	SLD1		PQ32558-1-1	SHIELD CASE (1)	
	CN1		PU58844-9	CAP HOUSING	
	CN2		PU58844-3	CAP HOUSING	

— REGULATOR BOARD ASSEMBLY ⟨02⟩ —

PWBA2		PB10166C2-02	REGULATOR BOARD ASSEMBLY, E
PWBA2		PB10166A2-03	REGULATOR BOARD ASSEMBLY, EG
IC2		BA10324	IC
IC3		MC7805ACT	IC
IC101		M54647L	IC
Q11		2SD1764	TRANSISTOR
	or	2SD1796	TRANSISTOR
Q12		2SC1740S	TRANSISTOR
Q13		2SD1764	TRANSISTOR
	or	2SD1796	TRANSISTOR
Q14		2SD1764	TRANSISTOR
	or	2SD1796	TRANSISTOR
Q15		2SD1764	TRANSISTOR
	or	2SD1796	TRANSISTOR
Q16		2SB1186(DE)	TRANSISTOR
⚠ Q17		2SA720	TRANSISTOR
Q18		DTA114ES	TRANSISTOR
Q19		DTB114ES	TRANSISTOR

#⚠	REF No.		PART No.	PART NAME, DESCRIPTION	
	D16		RD6.2ES-T1B3	ZENER DIODE	
	D17		RD5.1ES-T1B2	ZENER DIODE	
	D18		1SS133	DIODE	
	D19		HZ6B1TE	DIODE	
		or	HZ6B1TJ	DIODE	
	D20		RD13ES-T1B3	DIODE	
	D21		HZS33EB1	ZENER DIODE	
	D22		1SS133	DIODE	
		or	MA165	DIODE	
	D23		1SS133	DIODE	
		or	MA165	DIODE	
	D24		1SS133	DIODE	
		or	MA165	DIODE	
	D25		1SS133	DIODE	
		or	MA165	DIODE	
	D26		1SS133	DIODE	
		or	MA165	DIODE	
	D27		RD20ES-T1B2	ZENER DIODE	
		or	MTZ20BT-77	ZENER DIODE	
	R14		QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R15		QRD161J-362	RESISTOR	3.6KΩ, 1/6W
	R16		QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R17		QRD161J-102	RESISTOR	1KΩ, 1/6W
	R18		QRD161J-622	RESISTOR	6.2KΩ, 1/6W
	R19		QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R20		QRD161J-102	RESISTOR	1KΩ, 1/6W
	R21		QRD161J-153	RESISTOR	15KΩ, 1/6W
	R22		QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R23		QRD161J-102	RESISTOR	1KΩ, 1/6W
	R24		QRD161J-102	RESISTOR	1KΩ, 1/6W
	R25		QRD161J-153	RESISTOR	15KΩ, 1/6W
	R26		QVZ3244-222	V RESISTOR, SWD 5V ADJ	2.2KΩ
	R27		QRD161J-223	RESISTOR	22KΩ, 1/6W
	R28		QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R29		QRD161J-103	RESISTOR	10KΩ, 1/6W
	R30		QRD161J-392	RESISTOR	3.9KΩ, 1/6W
	R31		QRD161J-102	RESISTOR	1KΩ, 1/6W
	R32		QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R33		QRD161J-331	RESISTOR	330Ω, 1/6W
	R34		QRD161J-272	RESISTOR	2.7KΩ, 1/6W
⚠	R35		QRZ0077-220X	FUSIBLE RESISTOR	22Ω
⚠	R36		QRZ0077-220X	FUSIBLE RESISTOR	22Ω
	R43		QRD161J-392	RESISTOR	3.9KΩ, 1/6W
	R44		QRD181J-1R0	RESISTOR	1.0Ω, 1/8W
	R45		QRD181J-1R0	RESISTOR	1.0Ω, 1/8W
	R46		QRD181J-1R0	RESISTOR	1.0Ω, 1/8W
	R47		QRD181J-1R0	RESISTOR	1.0Ω, 1/8W
	R48		QRD181J-1R0	RESISTOR	1.0Ω, 1/8W
	R49		QRD181J-1R0	RESISTOR	1.0Ω, 1/8W
	R50		QRD181J-1R0	RESISTOR	1.0Ω, 1/8W
	R51		QRD181J-1R0	RESISTOR	1.0Ω, 1/8W
	R52		QRD181J-562	RESISTOR	5.6KΩ, 1/8W
	R53		QRD181J-562	RESISTOR	5.6KΩ, 1/8W

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C43	QFN31HJ-103	M CAPACITOR	0.01μF, 50V
	C44	QETC1CM-107	E CAPACITOR	100μF, 16V
	C45	QETC1HM-106	E CAPACITOR	10μF, 50V
	C46	QFN31HJ-103	M CAPACITOR	0.01μF, 50V
	C47	QFN31HJ-103	M CAPACITOR	0.01μF, 50V
	C48	QETC1CM-107	E CAPACITOR	100μF, 16V
	C49	QFN31HJ-103	M CAPACITOR	0.01μF, 50V
	C50	QFN31HJ-103	M CAPACITOR	0.01μF, 50V
	C51	QETC1AM-107	E CAPACITOR	100μF, 10V
	C52	QETC1HM-476	E CAPACITOR	47μF, 50V
	C53	QETC1CM-107	E CAPACITOR	100μF, 16V
	C54	QETC1HM-106	E CAPACITOR	10μF, 50V
	C55	QFN31HJ-103	M CAPACITOR	0.01μF, 50V
	C56	QFN31HJ-103	M CAPACITOR	0.01μF, 50V
	C57	QETC1AM-107	E CAPACITOR	100μF, 10V
	C58	QETC1HM-226	E CAPACITOR	22μF, 50V
	C59	QETC1HM-226	E CAPACITOR	22μF, 50V
	C60	QETC1HM-226	E CAPACITOR	22μF, 50V
	C101	QETC1EM-476	E CAPACITOR	47μF, 25V
	C102	QETC1HM-105	E CAPACITOR	1μF, 50V
	L18	PU53618-101J	COIL	100μH
⚠	RY1	PU59457	RELAY	
⚠	HD1	PU57505	FUSE CLIP, X4, FOR F1, F2	
⚠	HS1	PQ43701-1-1	HEAT SINK	
⚠	LF1	PU60020	LINE FILTER, EG	
⚠	TAB1	A74316	TAB, X2	
	TP1	PU55774	TEST PIN, X4, (1-3, GND)	
	CN4	PU58844-102	CAP HOUSING	
	CN5	PU58844-102R	CAP HOUSING	
	CN6	PU58844-107	CAP HOUSING	
	CN7	PU59555-105	CAP HOUSING	
	CN8	PU59555-108	CAP HOUSING	
	CN9	PU58844-103R	CAP HOUSING	
	CN10	PU58844-103R	CAP HOUSING	
	CN11	PU58844-103Y	CAP HOUSING	
	CN12	PU59555-108	CAP HOUSING	
⚠	CP1	ICP-F25	CIRCUIT PROTECTOR	
⚠	CP2	ICP-F25	CIRCUIT PROTECTOR	
⚠	CP3	ICP-F20	CIRCUIT PROTECTOR	
⚠	CP4	ICP-F20	CIRCUIT PROTECTOR	
⚠	CP101	ICP-F25	CIRCUIT PROTECTOR	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	

7. MECHACON BOARD ASSEMBLY ⟨04⟩

	PWBA		PB10310A-01	MECHACON BOARD ASSY
	IC1		M50938A-309SP	IC
		or	M50938E-316SP	IC
	IC2		TA8405S	IC
	IC4		BA6222	IC
	IC5		M50255P	IC
	Q1		2SD1468S(RS)	TRANSISTOR
	Q2		DTC144ES	TRANSISTOR
	Q3		DTC144ES	TRANSISTOR
	D1		HZS4.3EB2	ZENER DIODE
	D2		MA165	DIODE
		or	1SS133	DIODE
	D3		MA165	DIODE
		or	1SS133	DIODE
	D4		MA165	DIODE
		or	1SS133	DIODE
	D5		HZS7.5EB2	ZENER DIODE
	D6		MA165	DIODE
		or	1SS133	DIODE
	D7		MA165	DIODE
		or	1SS133	DIODE
	D8		MA165	DIODE
		or	1SS133	DIODE
	D9		MA165	DIODE
		or	1SS133	DIODE
	D10		MA165	DIODE
		or	1SS133	DIODE
	D11		MA165	DIODE
		or	1SS133	DIODE
	R1		QRD161J-152	RESISTOR 1.5KΩ, 1/6W
	R2		QRD161J-332	RESISTOR 3.3KΩ, 1/6W
	R3		QRD161J-122	RESISTOR 1.2KΩ, 1/6W
	R4		QRD161J-823	RESISTOR 82KΩ, 1/6W
	R5		QRD161J-471	RESISTOR 470Ω, 1/6W
	R6		QRD161J-102	RESISTOR 1KΩ, 1/6W
	R7		QRD161J-102	RESISTOR 1KΩ, 1/6W
	R8		QRD161J-102	RESISTOR 1KΩ, 1/6W
	R9		QRD161J-103	RESISTOR 10KΩ, 1/6W
	R10		QRD161J-472	RESISTOR 4.7KΩ, 1/6W
	R11		QRD161J-472	RESISTOR 4.7KΩ, 1/6W
	R12		QRD161J-472	RESISTOR 4.7KΩ, 1/6W
	R13		QRD161J-472	RESISTOR 4.7KΩ, 1/6W
	R14		QRD161J-472	RESISTOR 4.7KΩ, 1/6W
	R15		QRD161J-472	RESISTOR 4.7KΩ, 1/6W
	R16		QRD161J-103	RESISTOR 10KΩ, 1/6W
	R17		QRD161J-103	RESISTOR 10KΩ, 1/6W
	R18		QRD161J-103	RESISTOR 10KΩ, 1/6W
	R19		QRD161J-333	RESISTOR 33KΩ, 1/6W
	R20		QRD161J-472	RESISTOR 4.7KΩ, 1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R21	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R22	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R23	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R24	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R25	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R26	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R27	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R28	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R29	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R30	QRD161J-124	RESISTOR	120KΩ, 1/6W
	R31	QRD161J-124	RESISTOR	120KΩ, 1/6W
	R32	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R33	QRD161J-821	RESISTOR	820Ω, 1/6W
	R34	QRD161J-331	RESISTOR	330Ω, 1/6W
	R35	QRD161J-822	RESISTOR	8.2KΩ, 1/6W
	R36	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R37	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R38	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R39	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R40	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R41	QRD161J-105	RESISTOR	1MΩ, 1/6W
	R42	QRD161J-561	RESISTOR	560Ω, 1/6W
	R43	QRD161J-561	RESISTOR	560Ω, 1/6W
	RA1	QRB049J-103C	RESISTOR ARRAY	
	or	QRB049J-103	RESISTOR ARRAY	
	or	QRB047J-103	RESISTOR ARRAY	
	RA2	QRB049J-472C	RESISTOR ARRAY	
	or	QRB049J-472	RESISTOR ARRAY	
	or	QRB047J-472	NETWORK RESISTOR	
	RA3	QRB049J-103C	RESISTOR ARRAY	
	or	QRB049J-103	RESISTOR ARRAY	
	or	QRB047J-103	RESISTOR ARRAY	
	C1	QCFB1EZ-223	CAPACITOR	0.022μF, 25V
	C2	QETC1EM-335	E CAPACITOR	3.3μF, 25V
	C5	QETC1EM-106	E CAPACITOR	10μF, 25V
	C6	QETC1EM-106	E CAPACITOR	10μF, 25V
	C7	QCFB1EZ-223	CAPACITOR	0.022μF, 25V
	C8	QETC1EM-475	E CAPACITOR	4.7μF, 25V
	C9	QCFB1EZ-223	CAPACITOR	0.022μF, 25V
	C10	QCC11CK-104	CAPACITOR	0.1μF, 16V
	C11	QCXB1CM-222	CAPACITOR	0.0022μF, 16V
	C12	QCXB1CM-222	CAPACITOR	0.0022μF, 16V
	L1	PU53223-R22G	COIL	0.22μH
	CF1	PU60414	CERAMIC FILTER	
	or	PU60942-Z	CERAMIC FILTER	
	K1	PU60281-5	FERRITE BEADS	
	K2	PU60281-5	FERRITE BEADS	
	CN1	PU59934-17	WIRE HOLDER	
	CN2	PU58844-6	CAP HOUSING	
	CN4	PU58930-14	CAP HOUSING	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	CN5	PU58930-12	CAP HOUSING
	CN6	PU59555-10	CAP HOUSING
	CN9	PU59555-8	CAP HOUSING
	CN12	PU59555-7	CAP HOUSING
	CN13	PU58844-3	CAP HOUSING
	CN14	PU58928-18	CAP HOUSING
	CN15	PU58928-13	CAP HOUSING
	CN16	PU58928-16	CAP HOUSING
	CN17	PU58928-15	CAP HOUSING
	CN18	PU59555-8	CAP HOUSING
	CN20	PU59555-6	CAP HOUSING

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8. VIDEO BOARD ASSEMBLY ⟨05⟩

PWBA	PB10154G	VIDEO BOARD ASSY
CL1	PU56729-2	WIRE CLAMP
CL2	PU55379	MINI CLAMP
HN1	PU58018-1-2	PWB HINGE, X2
SPC1	PU60010	SPACER
TP1	PU57545	TEST PIN, X38
TP2	PU56008	TEST PIN
CN1	PU58844-2	CAP HOUSING
CN2	PU58844-6	CAP HOUSING
CN3	PU58844-3	CAP HOUSING
CN4	PU59555-10	CAP HOUSING
CN5	PU58844-8	CAP HOUSING
CN6	PU58844-4	CAP HOUSING
CN7	PU58844-5	CAP HOUSING
CN8	PU58844-5	CAP HOUSING
CN9	PU58844-6	CAP HOUSING
CN10	PU58844-4	CAP HOUSING
CN12	PU59555-5	CAP HOUSING
CN14	PU58844-2	CAP HOUSING

— LUMINANCE SECTION —

IC1	PB20291A	Y MODULE BOARD ASSY
IC2	NJM2234D	IC
IC3	M51288SP	IC
IC4	HA118070	IC
IC5	NJM2233AD	IC
IC6	PB20290A-02	JOG MODULE BOARD ASSY
IC7	M52055P	IC
IC8	NJM2233AD	IC
IC9	PB20285A	Y MODULE BOARD ASSY
IC10	PB20298A	Y MODULE BOARD ASSY

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	IC11	PB20286A-02	YNR MODULE BOARD ASSY
	IC12	VC2063S	IC
	IC13	TC74HC04AP	IC
	or	MC74HC04AN	IC
	IC14	AN6041	IC
	IC15	BA7021	IC
	IC16	BU4066B	IC
	Q1	2SC1740S(QRS)	TRANSISTOR
	Q2	DTC124ES	TRANSISTOR
	Q3	DTC124ES	TRANSISTOR
	Q4	2SC1740S(QRS)	TRANSISTOR
	Q5	2SC1740S(QRS)	TRANSISTOR
	Q6	DTC124ES	TRANSISTOR
	Q7	DTC124ES	TRANSISTOR
	Q8	2SA933S	TRANSISTOR
	Q9	2SA933S	TRANSISTOR
	Q10	2SC1740S(QRS)	TRANSISTOR
	Q11	2SA933S	TRANSISTOR
	Q12	2SC1740S(QRS)	TRANSISTOR
	Q13	2SC1740S(QRS)	TRANSISTOR
	Q14	2SA933S	TRANSISTOR
	Q15	2SA933S	TRANSISTOR
	Q16	2SA933S	TRANSISTOR
	Q17	DTC124ES	TRANSISTOR
	Q18	2SK381(C)	FE TRANSISTOR
	Q19	2SA933S	TRANSISTOR
	Q20	2SC1740S(QRS)	TRANSISTOR
	Q21	2SC1740S(QRS)	TRANSISTOR
	Q22	DTC144ES	TRANSISTOR
	Q23	2SA933S	TRANSISTOR
	Q24	2SA933S	TRANSISTOR
	Q25	2SA933S	TRANSISTOR
	Q26	2SC1740S(QRS)	TRANSISTOR
	Q27	DTC124ES	TRANSISTOR
	Q28	DTC124ES	TRANSISTOR
	Q29	DTA124ES	TRANSISTOR
	Q30	2SC1740S(QRS)	TRANSISTOR
	Q31	2SC1740S(QRS)	TRANSISTOR
	Q32	DTA124ES	TRANSISTOR
	Q33	2SA933S	TRANSISTOR
	Q34	2SC1740S(RS)	TRANSISTOR
	Q35	2SB851Q, R	TRANSISTOR
	Q36	DTA124ES	TRANSISTOR
	Q37	DTA124ES	TRANSISTOR
	Q38	DTC124ES	TRANSISTOR
	Q39	2SC3313CTA	TRANSISTOR
	Q40	2SC3313CTA	TRANSISTOR
	Q41	2SC1740S(QRS)	TRANSISTOR
	Q42	2SC2647C	TRANSISTOR
	Q43	2SC2647C	TRANSISTOR
	Q45	2SC1740S(QRS)	TRANSISTOR
	Q46	2SA933S	TRANSISTOR
	Q47	2SC1740S(QRS)	TRANSISTOR
	Q48	2SC1740S(QRS)	TRANSISTOR
	Q49	2SA933S	TRANSISTOR
	Q50	2SA933S	TRANSISTOR
	Q51	2SA933S	TRANSISTOR
	Q52	2SC1740S(QRS)	TRANSISTOR
	Q53	DTC124ES	TRANSISTOR
	Q54	DTC144ES	TRANSISTOR
	Q55	2SA933S	TRANSISTOR
	D1	1SS133	DIODE
	or	MA165	DIODE
	D2	1SS133	DIODE
	or	MA165	DIODE
	D3	1SS133	DIODE
	or	MA165	DIODE
	D4	1SS133	DIODE
	or	MA165	DIODE
	D5	1SS133	DIODE
	or	MA165	DIODE
	D6	1SS133	DIODE
	or	MA165	DIODE
	D7	1SS133	DIODE
	or	MA165	DIODE
	D8	1SS133	DIODE
	or	MA165	DIODE
	D10	1SS133	DIODE
	or	MA165	DIODE
	D11	1SS133	DIODE
	or	MA165	DIODE
	D12	1SS133	DIODE
	or	MA165	DIODE
	D13	1SS133	DIODE
	or	MA165	DIODE
	D16	1SS133	DIODE
	or	MA165	DIODE
	D17	1SS133	DIODE
	or	MA165	DIODE
	D18	1SS133	DIODE
	or	MA165	DIODE
	D20	OA90UF	DIODE
	D21	OA90UF	DIODE
	D22	1SS133	DIODE
	or	MA165	DIODE
	D23	1SS133	DIODE
	or	MA165	DIODE
	D24	1SS133	DIODE
	or	MA165	DIODE
	D26	1SS133	DIODE
	or	MA165	DIODE
	D27	1SS133	DIODE
	or	MA165	DIODE
	D28	1SS133	DIODE
	or	MA165	DIODE
	D29	1SS133	DIODE
	or	MA165	DIODE
	D31	1SS133	DIODE
	or	MA165	DIODE
	D32	1SS133	DIODE
	or	MA165	DIODE
	D34	RD9.1ES-T1B2	ZENER DIODE
	R1	QRD161J-562	RESISTOR 5.6KΩ, 1/6W
	R2	QRD161J-822	RESISTOR 8.2KΩ, 1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	R3	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R4	QRD161J-182	RESISTOR 1.8KΩ, 1/6W
	R5	QRD161J-821	RESISTOR 820Ω, 1/6W
	R6	QRD161J-681	RESISTOR 680Ω, 1/6W
	R7	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R8	QRD161J-273	RESISTOR 27KΩ, 1/6W
	R9	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R10	QRD161J-681	RESISTOR 680Ω, 1/6W
	R11	QRD161J-331	RESISTOR 330Ω, 1/6W
	R12	QRD161J-331	RESISTOR 330Ω, 1/6W
	R13	QRD161J-475	RESISTOR 4.7MΩ, 1/6W
	R14	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R15	QRD161J-103	RESISTOR 10KΩ, 1/6W
	R16	QRD161J-222	RESISTOR 2.2KΩ, 1/6W
	R17	QRD161J-821	RESISTOR 820Ω, 1/6W
	R18	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R19	QRD161J-222	RESISTOR 2.2KΩ, 1/6W
	R20	QRD161J-122	RESISTOR 1.2KΩ, 1/6W
	R21	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R22	QRD161J-681	RESISTOR 680Ω, 1/6W
	R23	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R24	QRD161J-122	RESISTOR 1.2KΩ, 1/6W
	R25	QRD161J-562	RESISTOR 5.6KΩ, 1/6W
	R26	QRD121J-181	RESISTOR 180Ω, 1/2W
	R27	QVZ3518-102	V RESISTOR, 0.25H DL VIDEO LEV 1KΩ
	R28	QRD161J-471	RESISTOR 470Ω, 1/6W
	R29	QRD161J-821	RESISTOR 820Ω, 1/6W
	R30	QRD161J-561	RESISTOR 560Ω, 1/6W
	R31	QRD161J-471	RESISTOR 470Ω, 1/6W
	R32	QRD161J-153	RESISTOR 15KΩ, 1/6W
	R33	QRD161J-561	RESISTOR 560Ω, 1/6W
	R34	QRD161J-182	RESISTOR 1.8KΩ, 1/6W
	R35	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R36	QRD161J-221	RESISTOR 220Ω, 1/6W
	R37	QRD161J-271	RESISTOR 270Ω, 1/6W
	R38	QRD161J-471	RESISTOR 470Ω, 1/6W
	R39	QRD161J-152	RESISTOR 1.5KΩ, 1/6W
	R40	QRD161J-152	RESISTOR 1.5KΩ, 1/6W
	R41	QRD161J-562	RESISTOR 5.6KΩ, 1/6W
	R42	QVZ3518-103	V RESISTOR, SHARPNESS PRESET 10KΩ
	R43	QRD161J-103	RESISTOR 10KΩ, 1/6W
	R44	QRD161J-331	RESISTOR 330Ω, 1/6W
	R45	QRD161J-331	RESISTOR 330Ω, 1/6W
	R46	QRD161J-331	RESISTOR 330Ω, 1/6W
	R47	QRD161J-152	RESISTOR 1.5KΩ, 1/6W
	R48	QRD161J-391	RESISTOR 390Ω, 1/6W
	R49	QRD161J-152	RESISTOR 1.5KΩ, 1/6W
	R50	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R51	QRD161J-153	RESISTOR 15KΩ, 1/6W
	R52	QRD161J-683	RESISTOR 68KΩ, 1/6W
	R53	QRD161J-122	RESISTOR 1.2KΩ, 1/6W
	R54	QRD161J-152	RESISTOR 1.5KΩ, 1/6W
	R55	QRD161J-391	RESISTOR 390Ω, 1/6W
	R57	QVZ3518-151	V RESISTOR, SUB EMPHA IN LEVEL 150Ω
	R58	QRD161J-241	RESISTOR 240Ω, 1/6W
	R60	QRD161J-273	RESISTOR 27KΩ, 1/6W
	R61	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R62	QRD161J-222	RESISTOR 2.2KΩ, 1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	R63	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R64	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R65	QRD161J-152	RESISTOR 1.5KΩ, 1/6W
	R66	QRD161J-561	RESISTOR 560Ω, 1/6W
	R67	QRD161J-821	RESISTOR 820Ω, 1/6W
	R68	QRD161J-471	RESISTOR 470Ω, 1/6W
	R69	QRD161J-123	RESISTOR 12KΩ, 1/6W
	R70	QRD161J-473	RESISTOR 47KΩ, 1/6W
	R71	QRD161J-122	RESISTOR 1.2KΩ, 1/6W
	R72	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R73	QRD161J-822	RESISTOR 8.2KΩ, 1/6W
	R74	QRD161J-182	RESISTOR 1.8KΩ, 1/6W
	R75	QVZ3518-102	V RESISTOR, E-E Y LEVEL 1KΩ
	R76	QRD161J-272	RESISTOR 2.7KΩ, 1/6W
	R77	QRD161J-332	RESISTOR 3.3KΩ, 1/6W
	R78	QRD161J-183	RESISTOR 18KΩ, 1/6W
	R79	QRD161J-222	RESISTOR 2.2KΩ, 1/6W
	R80	QRD161J-681	RESISTOR 680Ω, 1/6W
	R81	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R82	QRD161J-393	RESISTOR 39KΩ, 1/6W
	R83	QRD161J-153	RESISTOR 15KΩ, 1/6W
	R84	QRD161J-154	RESISTOR 150KΩ, 1/6W
	R85	QRD161J-124	RESISTOR 120KΩ, 1/6W
	R87	QRD161J-394	RESISTOR 390KΩ, 1/6W
	R88	QRD161J-475	RESISTOR 4.7MΩ, 1/6W
	R89	QRD161J-562	RESISTOR 5.6KΩ, 1/6W
	R91	QVZ3518-473	V RESISTOR, N-MODE PB Y LEVEL 47KΩ
	R92	QVZ3518-473	V RESISTOR, S-MODE PB Y LEVEL 47KΩ
	R93	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R94	QRD161J-821	RESISTOR 820Ω, 1/6W
	R95	QVZ3518-102	V RESISTOR, N-MODE REC FM 1KΩ
	R96	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R97	QRD161J-103	RESISTOR 10KΩ, 1/6W
	R98	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R99	QRD161J-681	RESISTOR 680Ω, 1/6W
	R100	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R101	QRD161J-153	RESISTOR 15KΩ, 1/6W
	R102	QRD161J-561	RESISTOR 560Ω, 1/6W
	R103	QVZ3518-102	V RESISTOR, S-MODE REC FM 1KΩ
	R104	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R105	QRD161J-331	RESISTOR 330Ω, 1/6W
	R106	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R107	QVZ3518-151	V RESISTOR, Y COMB GAIN ADJ 150Ω
	R108	QVZ3518-473	V RESISTOR, 4H DELAYED CHROMA 47KΩ
	R109	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R110	QVZ3518-473	V RESISTOR, 2H DELAYED CHROMA 47KΩ
	R111	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R112	QRD161J-391	RESISTOR 390Ω, 1/6W
	R113	QRD161J-391	RESISTOR 390Ω, 1/6W
	R114	QRD161J-391	RESISTOR 390Ω, 1/6W
	R115	QRD161J-391	RESISTOR 390Ω, 1/6W
	R116	QRD161J-391	RESISTOR 390Ω, 1/6W
	R117	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R118	QVZ3520-223	V RESISTOR, Y COMB GAIN 22KΩ
	R119	QVZ3520-472	V RESISTOR, Y COMB PHASE 4.7KΩ
	R120	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R122	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R123	QRD161J-102	RESISTOR 1KΩ, 1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R124	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R125	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R126	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R127	QRD161J-473	RESISTOR	47KΩ, 1/6W
	R128	QRD161J-562	RESISTOR	5.6KΩ, 1/6W
	R129	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R130	QRD161J-393	RESISTOR	39KΩ, 1/6W
	R131	QRD161J-272	RESISTOR	2.7KΩ, 1/6W
	R132	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R133	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R135	QRD161J-473	RESISTOR	47KΩ, 1/6W
	R136	QRD161J-393	RESISTOR	39KΩ, 1/6W
	R137	QRD161J-153	RESISTOR	15KΩ, 1/6W
	R138	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R139	QRD161J-182	RESISTOR	1.8KΩ, 1/6W
	R140	QRD161J-271	RESISTOR	270Ω, 1/6W
	R141	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R142	QRD161J-392	RESISTOR	3.9KΩ, 1/6W
	R145	QRD161J-562	RESISTOR	5.6KΩ, 1/6W
	R146	QRD161J-682	RESISTOR	6.8KΩ, 1/6W
⚠	R147	QRD121J-680	RESISTOR	68Ω, 1/2W
	R148	QRD161J-271	RESISTOR	270Ω, 1/6W
	R149	QRD161J-101	RESISTOR	100Ω, 1/6W
	R150	QRD161J-101	RESISTOR	100Ω, 1/6W
	R151	QRD161J-393	RESISTOR	39KΩ, 1/6W
	R152	QRD161J-822	RESISTOR	8.2KΩ, 1/6W
	R153	QRD161J-122	RESISTOR	1.2KΩ, 1/6W
	R154	QRD161J-271	RESISTOR	270Ω, 1/6W
	R155	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R156	QRD161J-221	RESISTOR	220Ω, 1/6W
	R157	QRD161J-221	RESISTOR	220Ω, 1/6W
	R161	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R162	QRD161J-181	RESISTOR	180Ω, 1/6W
	R163	QVZ3518-471	V RESISTOR, 0.25H DL VIDEO	470Ω
	R164	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R165	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R166	QRD161J-151	RESISTOR	150Ω, 1/6W
	R167	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R168	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R169	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R170	QRD161J-153	RESISTOR	15KΩ, 1/6W
	R171	QRD161J-121	RESISTOR	120Ω, 1/6W
	R172	QRD161J-101	RESISTOR	100Ω, 1/6W
	R173	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R174	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R175	QRD161J-331	RESISTOR	330Ω, 1/6W
	R176	QRD161J-392	RESISTOR	3.9KΩ, 1/6W
	R177	ERT-D2FHL332S	THERMISTOR	
	R178	QRD161J-272	RESISTOR	2.7KΩ, 1/6W
	R179	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R180	QRD161J-122	RESISTOR	1.2KΩ, 1/6W
	R181	QRD161J-562	RESISTOR	5.6KΩ, 1/6W
	R182	QRD161J-101	RESISTOR	100Ω, 1/6W
	R183	QRD161J-101	RESISTOR	100Ω, 1/6W
	R184	QRD161J-272	RESISTOR	2.7KΩ, 1/6W
	R185	QRD161J-471	RESISTOR	470Ω, 1/6W
	R186	QRD161J-391	RESISTOR	390Ω, 1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R187	QRD161J-621	RESISTOR	620Ω, 1/6W
	R188	QRD161J-392	RESISTOR	3.9KΩ, 1/6W
	R189	QRD161J-181	RESISTOR	180Ω, 1/6W
	R190	QRD161J-821	RESISTOR	820Ω, 1/6W
	R191	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R192	ERT-D2FGL102S	THERMISTOR	
	R193	QRD161J-473	RESISTOR	47KΩ, 1/6W
	R194	QRD161J-473	RESISTOR	47KΩ, 1/6W
	R195	QRD161J-561	RESISTOR	560Ω, 1/6W
	R196	QRD161J-561	RESISTOR	560Ω, 1/6W
	R197	QVZ3520-471	V RESISTOR, Y COMB ADJ	470Ω
	R198	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R199	QRD161J-121	RESISTOR	120Ω, 1/6W
	R200	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R201	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R204	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R205	QRD161J-102	RESISTOR	1KΩ, 1/6W
⚠	R206	QRD121J-680	RESISTOR	68Ω, 1/2W
	R209	QRD161J-474	RESISTOR	470KΩ, 1/6W
	R210	QRD161J-101	RESISTOR	100Ω, 1/6W
	R211	QRD161J-101	RESISTOR	100Ω, 1/6W
	R212	QRD161J-122	RESISTOR	1.2KΩ, 1/6W
	C1	QCSB1HJ-560	CAPACITOR	56PF, 50V
	C2	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C3	QCBB1HJ-181	CAPACITOR	180PF, 50V
	C4	QETC1EM-475	E CAPACITOR	4.7μF, 25V
	C5	QETC1HM-224	E CAPACITOR	0.22μF, 50V
	C6	QETC0JM-337	E CAPACITOR	330μF, 6.3V
	C7	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C8	QCSB1HJ-560	CAPACITOR	56PF, 50V
	C9	QETC1HM-105	E CAPACITOR	1μF, 50V
	C10	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C11	QCSB1HJ-680	CAPACITOR	68PF, 50V
	C13	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C14	QETC1HM-225	E CAPACITOR	2.2μF, 50V
	C15	QFN41HK-563	M CAPACITOR	0.056μF, 50V
	C16	QCBB1HJ-181	CAPACITOR	180PF, 50V
	C17	QCBB1HJ-391	CAPACITOR	390PF, 50V
	C18	QETC1HM-225	E CAPACITOR	2.2μF, 50V
	C19	QETC1CM-106	E CAPACITOR	10μF, 16V
	C20	QETC1EM-335	E CAPACITOR	3.3μF, 25V
	C21	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C22	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C23	QETC1CM-106	E CAPACITOR	10μF, 16V
	C24	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C25	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C26	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C27	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C28	QEK61EM-475	E CAPACITOR	4.7μF, 25V
	C29	QETC1EM-475	E CAPACITOR	4.7μF, 25V
	C30	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C31	QEK61EM-475	E CAPACITOR	4.7μF, 25V
	C32	QEK61EM-475	E CAPACITOR	4.7μF, 25V
	C33	QER61AM-226	E CAPACITOR	22μF, 10V
	C34	QETC0JM-337	E CAPACITOR	330μF, 6.3V
	C35	QCVB1CN-103	CAPACITOR	0.01μF, 16V

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C36	QEP61EM-475	NP E CAPACITOR	4.7μF, 25V
	C37	QER61EM-475	E CAPACITOR	4.7μF, 25V
	C38	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C40	QEK60JM-476	E CAPACITOR	47μF, 6.3V
	C41	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C42	QETC1CM-106	E CAPACITOR	10μF, 16V
	C43	QEK61CM-106	E CAPACITOR	10μF, 16V
	C44	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C45	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C46	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C47	QETC1CM-106	E CAPACITOR	10μF, 16V
	C48	QETC1CM-106	E CAPACITOR	10μF, 16V
	C49	QETC1CM-106	E CAPACITOR	10μF, 16V
	C50	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C51	QCSB1HJ-390	CAPACITOR	39PF, 50V
	C52	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C53	QETC1CM-476	E CAPACITOR	47μF, 16V
	C54	QETC1CM-106	E CAPACITOR	10μF, 16V
	C55	QEK61CM-106	E CAPACITOR	10μF, 16V
	C56	QEK61CM-106	E CAPACITOR	10μF, 16V
	C57	QEK61CM-106	E CAPACITOR	10μF, 16V
	C58	QEK61CM-106	E CAPACITOR	10μF, 16V
	C60	QEK61CM-476	E CAPACITOR	47μF, 16V
	C61	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C62	QCSB1HJ-470	CAPACITOR	47PF, 50V
	C63	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C64	QCSB1HJ-470	CAPACITOR	47PF, 50V
	C65	QEK60JM-476	E CAPACITOR	47μF, 6.3V
	C66	QEK61CM-106	E CAPACITOR	10μF, 16V
	C67	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C68	QEK61CM-106	E CAPACITOR	10μF, 16V
	C69	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C70	QEK61CM-476	E CAPACITOR	47μF, 16V
	C74	QCSB1HJ-560	CAPACITOR	56PF, 50V
	C76	QETC0JM-476	E CAPACITOR	47μF, 6.3V
	C77	QETC1EM-335	E CAPACITOR	3.3μF, 25V
	C78	QETC0JM-476	E CAPACITOR	47μF, 6.3V
	C79	QETC1CM-106	E CAPACITOR	10μF, 16V
	C80	QETC1CM-106	E CAPACITOR	10μF, 16V
	C81	QETC0JM-476	E CAPACITOR	47μF, 6.3V
	C82	QETC1EM-475	E CAPACITOR	4.7μF, 25V
	C83	QETC1EM-475	E CAPACITOR	4.7μF, 25V
	C84	QCBB1HJ-121	CAPACITOR	120PF, 50V
	C85	QCSB1HJ-560	CAPACITOR	56PF, 50V
	C86	QEK61CM-106	E CAPACITOR	10μF, 16V
	C87	QCSB1HJ-150	CAPACITOR	15PF, 50V
	C88	QEK61HM-225	E CAPACITOR	2.2μF, 50V
	C89	QEK61CM-106	E CAPACITOR	10μF, 16V
	C90	QEK51CM-476	E CAPACITOR	47μF, 16V
	C91	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C92	QETC1CM-106	E CAPACITOR	10μF, 16V
	C93	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C94	QCSB1HJ-270	CAPACITOR	27PF, 50V
	C95	QCSB1HJ-180	CAPACITOR	18PF, 50V
	C96	QETC1HM-335	E CAPACITOR	3.3μF, 50V
	C97	QCBB1HJ-151	CAPACITOR	150PF, 50V
	C98	QETC1HM-105	E CAPACITOR	1μF, 50V
	C99	QED60JM-127	E CAPACITOR	120μF, 6.3V

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C100	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C101	QETC0JM-337	E CAPACITOR	330μF, 6.3V
	C102	QCSB1HJ-120	CAPACITOR	12PF, 50V
	C103	QCBB1HJ-121	CAPACITOR	120PF, 50V
	C104	QCBB1HJ-121	CAPACITOR	120PF, 50V
	C105	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C106	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C107	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C108	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C109	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C110	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C111	QETC0JM-476	E CAPACITOR	47μF, 6.3V
	C112	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C113	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C114	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C115	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C116	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C117	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C118	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C119	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C120	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C121	QEK61CM-106	E CAPACITOR	10μF, 16V
	C122	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C123	QETC1HM-105	E CAPACITOR	1μF, 50V
	C124	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C125	QETC1CM-476	E CAPACITOR	47μF, 16V
	C126	QEK61AM-476	E CAPACITOR	47μF, 10V
	C127	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C129	QCSB1HK-5R6	CAPACITOR	5.6PF, 50V
	C130	QETC0JM-476	E CAPACITOR	47μF, 6.3V
	C131	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C132	QETC1AM-476	E CAPACITOR	47μF, 10V
	C133	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C134	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C135	QETC1CM-476	E CAPACITOR	47μF, 16V
	C136	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C137	QETC1CM-476	E CAPACITOR	47μF, 16V
	C138	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C139	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C140	QETC0JM-476	E CAPACITOR	47μF, 6.3V
	C141	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C142	QEN61HM-105	NP E CAPACITOR	1μF, 50V
	C143	QETC1HM-104	E CAPACITOR	0.1μF, 50V
	C144	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C146	QCSB1HJ-220	CAPACITOR	22PF, 50V
	C147	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C148	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C149	QCSB1HJ-560	CAPACITOR	56PF, 50V
	C150	QCSB1HJ-390	CAPACITOR	39PF, 50V
	C151	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C152	QEK61CM-336	E CAPACITOR	33μF, 16V
	C153	QCSB1HK-5R6	CAPACITOR	5.6PF, 50V
	C154	QCSB1HJ-390	CAPACITOR	39PF, 50V
	C155	QCSB1HJ-120	CAPACITOR	12PF, 50V
	C156	QCSB1HJ-220	CAPACITOR	22PF, 50V
	C157	QCBB1HJ-181	CAPACITOR	180PF, 50V
	C159	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C160	QCBB1HJ-151	CAPACITOR	150PF, 50V

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C162	QEK61CM-106	E CAPACITOR	10μF, 16V
	C163	QEK61CM-106	E CAPACITOR	10μF, 16V
	C165	QEK61CM-476	E CAPACITOR	47μF, 16V
	C166	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C167	QETC1CM-107	E CAPACITOR	100μF, 16V
	C168	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C169	QETC1CM-106	E CAPACITOR	10μF, 16V
	C171	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C172	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C173	QCT25CH-470	CAPACITOR	47PF
	C174	QCBB1HJ-471	CAPACITOR	470PF, 50V
	C175	QCC31CJ-563	CAPACITOR	0.056μF, 16V
	C178	QCVC1CN-103	CAPACITOR	0.01μF, 16V
	C179	QCSB1HJ-470	CAPACITOR	47PF, 50V
	C180	QCSB1HJ-220	CAPACITOR	22PF, 50V
	C183	QCSB1HJ-390	CAPACITOR	39PF, 50V
	C184	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	L1	PU59152-220J	PEAKING COIL	22μH
	L2	PU48530-101K	PEAKING COIL	100μH
	L3	PU48530-101K	PEAKING COIL	100μH
	L4	PU48530-101K	PEAKING COIL	100μH
	L5	PU48530-101K	PEAKING COIL	100μH
	L6	PU48530-101K	PEAKING COIL	100μH
	L7	PU48530-101K	PEAKING COIL	100μH
	L8	PU48530-101K	PEAKING COIL	100μH
	L9	PU48530-101K	PEAKING COIL	100μH
	L10	PU48530-101K	PEAKING COIL	100μH
	L11	PU48530-101K	PEAKING COIL	100μH
	L12	PU48530-101K	PEAKING COIL	100μH
	L13	PU59152-220J	PEAKING COIL	22μH
	L14	PU48530-101K	PEAKING COIL	100μH
	L15	PU48530-101K	PEAKING COIL	100μH
	L16	PU59152-820J	PEAKING COIL	82μH
	L17	PU48530-101K	PEAKING COIL	100μH
	L18	PU59152-560J	PEAKING COIL	56μH
	L19	PU48530-101K	PEAKING COIL	100μH
	L20	PU48530-471K	PEAKING COIL	470μH
	L21	PU59152-150J	PEAKING COIL	15μH
	L22	PU48530-101K	PEAKING COIL	100μH
	L23	PU48530-471K	PEAKING COIL	470μH
	L24	PU48530-560J	PEAKING COIL	56μH
	L25	PU59152-221J	PEAKING COIL	220μH
	L26	PU59152-560J	PEAKING COIL	56μH
	L27	PU48530-101K	PEAKING COIL	100μH
	L28	PU48530-101K	PEAKING COIL	100μH
	L29	PU48530-101K	PEAKING COIL	100μH
	L30	PU60165-8R2G	PEAKING COIL	8.2μH
	L31	PU60165-8R2G	PEAKING COIL	8.2μH
	L32	PU48530-101K	PEAKING COIL	100μH
	L33	PU59152-180J	PEAKING COIL	18μH
	L35	PU59152-1R0K	PEAKING COIL	1.0μH
	L36	PU59152-1R0K	PEAKING COIL	1.0μH
	L38	PU59152-5R6J	PEAKING COIL	5.6μH
	L39	PU48530-101K	PEAKING COIL	100μH
	L40	PU59152-820J	PEAKING COIL	82μH

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	L41	PU59152-470J	PEAKING COIL	47μH
	L42	PU59152-221J	PEAKING COIL	220μH
	L43	PU48530-101K	PEAKING COIL	100μH
	L44	PU59152-151J	PEAKING COIL	150μH
	EQ1	PU60099	EQUALIZER	
	EQ2	PU60809	EQUALIZER	
	EQ3	PU60810	EQUALIZER	
	LPF1	PU60813	LOW & BAND PASS FILTER	
	LPF2	PU60737	LOW PASS FILTER	
	LPF3	PU60806-2	LOW PASS FILTER	
	BPF2	PU60921	BAND PASS FILTER	
	BPF3	PU60808-2	BAND PASS FILTER	
	DL1	PU60815	2H DELAY LINE	
	DL3	PU60816-2	1/4H DELAY LINE	
⚠	X101	PU60438	CRYSTAL RESONATOR	
	T1	PU60814	COIL	
	T2	PU60814	COIL, 2H/4H DELAYED CHROMA	

— COLOR SECTION —

	IC301	PB20287A-03	COLOR MODULE BOARD ASSY
	IC302	PB20289A-02	JOG MODULE BOARD ASSY
	IC303	NJM2233AD	IC
	IC401	BA7106LS	IC
	Q301	2SA933S	TRANSISTOR
	Q302	DTC144WS	TRANSISTOR
	Q303	DTA124ES	TRANSISTOR
	Q304	2SC1740S(QRS)	TRANSISTOR
	Q305	2SC1740S(QRS)	TRANSISTOR
	Q307	2SC2021Q,R,S	TRANSISTOR
	Q308	2SA937	TRANSISTOR
	Q309	2SC1740S(QRS)	TRANSISTOR
	Q310	DTC124ES	TRANSISTOR
	Q311	2SC1740S(QRS)	TRANSISTOR
	Q312	DTC114ES	TRANSISTOR
	Q313	DTC114ES	TRANSISTOR
	Q314	DTC144WS	TRANSISTOR
	Q315	2SC1740S(QRS)	TRANSISTOR
	Q316	2SA933S	TRANSISTOR
	Q317	2SC1740S(QRS)	TRANSISTOR
	Q318	2SC1740S(QRS)	TRANSISTOR
	Q319	2SC1740S(QRS)	TRANSISTOR
	Q320	DTC124ES	TRANSISTOR
	Q323	DTC124ES	TRANSISTOR
	Q324	DTC124ES	TRANSISTOR
	Q326	2SA933S	TRANSISTOR
	Q327	2SA933S(QRS)	TRANSISTOR

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	Q331	DTC124ES	TRANSISTOR	
	Q332	2SC1740S(QRS)	TRANSISTOR	
	Q401	DTA124ES	TRANSISTOR	
	Q402	DTA124ES	TRANSISTOR	
	Q403	DTC124ES	TRANSISTOR	
	D301	1SS133	DIODE	
	or	MA165	DIODE	
	D302	1SS133	DIODE	
	or	MA165	DIODE	
	D311	1SS133	DIODE	
	or	MA165	DIODE	
	D312	1SS133	DIODE	
	or	MA165	DIODE	
	D313	1SS133	DIODE	
	or	MA165	DIODE	
	D314	1SS133	DIODE	
	or	MA165	DIODE	
	D315	1SS133	DIODE	
	or	MA165	DIODE	
	D321	1SS133	DIODE	
	or	MA165	DIODE	
	D322	1SS133	DIODE	
	or	MA165	DIODE	
	D401	1SS133	DIODE	
	or	MA165	DIODE	
	D402	1SS133	DIODE	
	or	MA165	DIODE	
	D403	1SS133	DIODE	
	or	MA165	DIODE	
	R302	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R303	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R304	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R305	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R307	QRD161J-225	RESISTOR	2.2MΩ, 1/6W
	R308	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R309	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R310	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R311	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R312	QRD161J-561	RESISTOR	560Ω, 1/6W
	R313	QRD161J-561	RESISTOR	560Ω, 1/6W
	R314	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R315	QRD161J-471	RESISTOR	470Ω, 1/6W
	R316	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R319	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R320	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R321	QRD161J-561	RESISTOR	560Ω, 1/6W
	R322	QRD161J-471	RESISTOR	470Ω, 1/6W
	R323	QRD161J-272	RESISTOR	2.7KΩ, 1/6W
	R324	QRD161J-391	RESISTOR	390Ω, 1/6W
	R325	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R326	QRD161J-561	RESISTOR	560Ω, 1/6W
	R327	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R328	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R329	QRD161J-222	RESISTOR	2.2KΩ, 1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R330	QRD161J-561	RESISTOR	560Ω, 1/6W
	R331	QRD161J-561	RESISTOR	560Ω, 1/6W
	R332	QRD161J-393	RESISTOR	39KΩ, 1/6W
	R333	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R334	QRD161J-221	RESISTOR	220Ω, 1/6W
	R335	QRD161J-391	RESISTOR	390Ω, 1/6W
	R336	QRD161J-152	RESISTOR	1.5KΩ, 1/6W
	R337	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R338	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R339	QRD161J-151	RESISTOR	150Ω, 1/6W
	R340	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R341	QRD161J-391	RESISTOR	390Ω, 1/6W
	R342	QRD161J-561	RESISTOR	560Ω, 1/6W
	R343	QRD161J-393	RESISTOR	39KΩ, 1/6W
	R344	QRD161J-332	RESISTOR	3.3KΩ, 1/6W
	R345	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R346	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R347	QRD161J-473	RESISTOR	47KΩ, 1/6W
	R348	QRD161J-391	RESISTOR	390Ω, 1/6W
	R349	QRD161J-821	RESISTOR	820Ω, 1/6W
	R350	QRD161J-471	RESISTOR	470Ω, 1/6W
	R351	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R352	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R353	QVZ3518-222	V RESISTOR, LP REC COLOR LEVEL	2.2KΩ
	R354	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R355	QVZ3518-222	V RESISTOR, SP REC COLOR LEVEL	2.2KΩ
	R357	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R358	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R359	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R360	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R361	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R362	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R363	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R364	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R366	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R367	QRD161J-473	RESISTOR	47KΩ, 1/6W
	R368	QRD161J-332	RESISTOR	3.3KΩ, 1/6W
	R371	QRD161J-182	RESISTOR	1.8KΩ, 1/6W
	R372	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R401	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R402	QRD161J-914	RESISTOR	910KΩ, 1/6W
	R403	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R404	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R405	QRD161J-273	RESISTOR	27KΩ, 1/6W
	C301	QETC1HM-105	E CAPACITOR	1μF, 50V
	C302	QETC1HM-105	E CAPACITOR	1μF, 50V
	C303	QCC31CJ-223	CAPACITOR	0.022μF, 16V
	C304	QETC0JM-107	E CAPACITOR	100μF, 6.3V
	C305	QETC1HM-105	E CAPACITOR	1μF, 50V
	C307	QCSB1HJ-330	CAPACITOR	33PF, 50V
	C308	QCSB1HJ-390	CAPACITOR	39PF, 50V
	C309	QFN41HJ-473	M CAPACITOR	0.047μF, 50V
	C310	QCSB1HJ-560	CAPACITOR	56PF, 50V
	C311	QEK60JM-476	E CAPACITOR	47μF, 6.3V
	C312	QCVB1CN-103	CAPACITOR	0.01μF, 16V

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C314	QCBB1HJ-820	CAPACITOR	82PF, 50V
	C316	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C317	QCXB1CN-222	CAPACITOR	0.0022μF, 16V
	C318	QCBB1HJ-820	CAPACITOR	82PF, 50V
	C320	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C321	QETC1HM-105	E CAPACITOR	1μF, 50V
	C322	QETC1HM-104	E CAPACITOR	0.1μF, 50V
	C323	QEK61EM-475	E CAPACITOR	4.7μF, 25V
	C324	QCC31CK-104	CAPACITOR	0.1μF, 16V
	C325	QETC0JM-337	E CAPACITOR	330μF, 6.3V
	C326	QCC31CK-563	CAPACITOR	0.056μF, 16V
	C327	QETC0JM-107	E CAPACITOR	100μF, 6.3V
	C328	QETC1EM-335	E CAPACITOR	3.3μF, 25V
	C329	QETC0JM-337	E CAPACITOR	330μF, 6.3V
	C330	QETB1HM-474	CAPACITOR	0.47μF, 50V
	C331	QETC1HM-474	E CAPACITOR	0.47μF, 50V
	C332	QETC1HM-474	E CAPACITOR	0.47μF, 50V
	C333	QEK61HM-474	E CAPACITOR	0.47μF, 50V
	C334	QETC1HM-474	E CAPACITOR	0.47μF, 50V
	C335	QETC1CM-106	E CAPACITOR	10μF, 16V
	C336	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C337	QCBB1HJ-121	CAPACITOR	120PF, 50V
	C338	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C339	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C341	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C342	QCSB1HJ-100	CAPACITOR	10PF, 50V
	C343	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C345	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C346	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C347	QCSB1HJ-390	CAPACITOR	39PF, 50V
	C348	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C349	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C350	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C351	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C352	QEK60JM-476	E CAPACITOR	47μF, 6.3V
	C353	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C355	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C401	QEK61CM-106	E CAPACITOR	10μF, 16V
	C402	QEK61EM-335	E CAPACITOR	3.3μF, 25V
	C403	QCBB1HJ-471	CAPACITOR	470PF, 50V
	C404	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C405	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C406	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C407	QFN31HJ-471	M CAPACITOR	470PF, 50V
	C408	QCSB1HJ-470	CAPACITOR	47PF, 50V
	C409	QCXB1CN-472	CAPACITOR	0.0047μF, 16V
	C410	QCSB1HK-4R7	CAPACITOR	4.7PF, 50V
	C411	QCSB1HJ-200	CAPACITOR	20PF, 50V
	C412	QEK60JM-107	E CAPACITOR	100μF, 6.3V
	C413	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	L301	PU48530-101K	PEAKING COIL	100μH
	L303	PU48530-101K	PEAKING COIL	100μH
	L304	PU59152-390J	PEAKING COIL	39μH
	L305	PU48530-222J	PEAKING COIL	2.2mH
	L306	PU59152-221J	PEAKING COIL	220μH

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	L308	PU48530-101K	PEAKING COIL	100μH
	L309	PU59152-100J	PEAKING COIL	10μH
	L310	PU59152-100J	PEAKING COIL	10μH
	L311	PU59153-822J	PEAKING COIL	8.2mH
	L312	PU59153-101K	PEAKING COIL	100μH
	L313	PU59153-101K	PEAKING COIL	100μH
	L314	PU48530-101K	PEAKING COIL	100μH
	L316	PU59152-150J	PEAKING COIL	15μH
	L317	PU48530-101K	PEAKING COIL	100μH
	L401	PU59152-330J	PEAKING COIL	33μH
	L402	PU48530-101K	PEAKING COIL	100μH
	EQ301	PU60811-2	EQUALIZER	
	LPF301	PU58022	LOW PASS FILTER	
	BPF301	PU57072	BAND PASS FILTER	
	or	PU57072-2	BAND PASS FILTER	
	BPF302	PU60654	BAND PASS FILTER	
	or	PU60654-2	BAND PASS FILTER	
	CF301	PU57073	CERAMIC FILTER	
	DL301	PU58971-3	2H DELAY LINE	
⚠	X301	PU60653	CRYSTAL UNITS	
	T301	PU49057	LC BLOCK, APC ERROR PHASE	
	T401	PU60655	COIL	

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9. TERMINAL BOARD ASSEMBLY ⟨06⟩

PWBA	PB20252M	TERMINAL BOARD ASSY, EG	
PWBA	PB20252N	TERMINAL BOARD ASSY, E	
D1	1SS133	DIODE	
or	MA165	DIODE	
R1	QRD161J-750	RESISTOR	75Ω, 1/6W
R2	QRD161J-750	RESISTOR	75Ω, 1/6W
R3	QRD161J-750	RESISTOR	75Ω, 1/6W
R4	QRD161J-750	RESISTOR	75Ω, 1/6W
R5	QRD161J-750	RESISTOR	75Ω, 1/6W
R7	QRD161J-102	RESISTOR	1KΩ, 1/6W
R8	QRD161J-102	RESISTOR	1KΩ, 1/6W
R9	QRD161J-102	RESISTOR	1KΩ, 1/6W
R10	QRD161J-102	RESISTOR	1KΩ, 1/6W
R11	QVZ3518-105	V RESISTOR, V LOCK	1MΩ

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C1	QCBB1HK-102	CAPACITOR, EG	0.001μF, 50V
	C2	QCBB1HK-102	CAPACITOR, EG	0.001μF, 50V
	LC1	PU59885-102	N FILTER, EG	
	LC2	PU59885-102	N FILTER, EG	
	LC3	PU59885-102	N FILTER, EG	
	LC4	PU59885-102	N FILTER, EG	
	LC5	PU59885-102	N FILTER, EG	
	LC6	PU59885-102	N FILTER, EG	
	SCW1	SDSF2608Z	TAPPING SCREW, X3	
	SPC1	PU60010	SPACER	
⚠	TB1	PQ20677-11	TERM.BOARD ASSY, EG	
⚠	TB1	PQ20677-12	TERM.BOARD ASSY, E	
	CN14	PU58929-18	CAP HOUSING	
	CN15	PU58929-13	CAP HOUSING	

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10. IF BOARD ASSEMBLY ⟨07⟩

	PWBA	PB10047AL	IF BOARD ASSY
	IC1	M51365SP	IC
	Q1	2SC3354	TRANSISTOR
	Q2	2SC3354	TRANSISTOR
	Q3	2SC1317(RS)	TRANSISTOR
	Q4	2SC1740(RS)	TRANSISTOR
	or	2SC3311A(RS)	TRANSISTOR
	or	2SC536SPA(FG)	TRANSISTOR
	Q5	2SC1740(RS)	TRANSISTOR
	or	2SC536SPA(FG)	TRANSISTOR
	or	2SC3311A(RS)	TRANSISTOR
	Q6	2SA933S(RS)	TRANSISTOR
	or	2SA1309AR,S	TRANSISTOR
	Q7	2SC1740(RS)	TRANSISTOR
	or	2SC536SPA(FG)	TRANSISTOR
	or	2SC3311A(RS)	TRANSISTOR
	Q10	2SC3354	TRANSISTOR
	Q11	2SC1740(RS)	TRANSISTOR
	or	2SC536SPA(FG)	TRANSISTOR
	or	2SC3311A(RS)	TRANSISTOR
	Q12	DTC144ES	TRANSISTOR
	or	UN4213	TRANSISTOR
	or	2SC3399	TRANSISTOR
	Q13	DTC144ES	TRANSISTOR
	or	UN4213	TRANSISTOR
	or	2SC3399	TRANSISTOR
	D1	MTZ10B	ZENER DIODE
	D6	1SS133	DIODE

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	D7	1SS133	DIODE	
	D8	1SS133	DIODE	
	R1	NRD187J-750NBU	RESISTOR	75Ω, 1/8W
	R4	NRD187J-332NBU	RESISTOR	3.3KΩ, 1/8W
	R5	NRD187J-151NBU	RESISTOR	150Ω, 1/8W
	R6	NRD187J-182NBU	RESISTOR	1.8KΩ, 1/8W
	R7	NRD187J-331NBU	RESISTOR	330Ω, 1/8W
	R8	NRD187J-681NBU	RESISTOR	680Ω, 1/8W
	R10	NRD187J-271NBU	RESISTOR	270Ω, 1/8W
	R11	NRD187J-180NBU	RESISTOR	18Ω, 1/8W
	R15	NRD187J-271NBU	RESISTOR	270Ω, 1/8W
	R17	NRD187J-562NBU	RESISTOR	5.6KΩ, 1/8W
	R18	NRD187J-332NBU	RESISTOR	3.3KΩ, 1/8W
	R19	NRD187J-272NBU	RESISTOR	2.7KΩ, 1/8W
	R20	NRD187J-222NBU	RESISTOR	2.2KΩ, 1/8W
	R21	QVZ3518-472	V RESISTOR, RF AGC	4.7KΩ
	or	QVZ3523-472	V RESISTOR	4.7KΩ
	R22	NRD187J-824NBU	RESISTOR	820KΩ, 1/8W
	R24	NRD187J-821NBU	RESISTOR	820Ω, 1/8W
	R31	NRD187J-222NBU	RESISTOR	2.2KΩ, 1/8W
	R32	NRD187J-102NBU	RESISTOR	1KΩ, 1/8W
	R33	NRD187J-223NBU	RESISTOR	22KΩ, 1/8W
	R34	NRD187J-470NBU	RESISTOR	47Ω, 1/8W
	R35	NRD187J-561NBU	RESISTOR	560Ω, 1/8W
	R36	NRD187J-561NBU	RESISTOR	560Ω, 1/8W
	R37	NRD187J-121NBU	RESISTOR	120Ω, 1/8W
	R38	NRD187J-182NBU	RESISTOR	1.8KΩ, 1/8W
	R39	NRD187J-272NBU	RESISTOR	2.7KΩ, 1/8W
	R40	QVZ3518-103	V RESISTOR, COLOR LEVEL	10KΩ
	or	QVZ3523-103	V RESISTOR	10KΩ
	R41	NRD187J-222NBU	RESISTOR	2.2KΩ, 1/8W
	R45	NRD187J-471NBU	RESISTOR	470Ω, 1/8W
	R46	NRD187J-104NBU	RESISTOR	100KΩ, 1/8W
	R47	NRD187J-153NBU	RESISTOR	15KΩ, 1/8W
	R48	NRD187J-392NBU	RESISTOR	3.9KΩ, 1/8W
	R49	NRD187J-103NBU	RESISTOR	10KΩ, 1/8W
	R50	NRD187J-471NBU	RESISTOR	470Ω, 1/8W
	R51	NRD187J-223NBU	RESISTOR	22KΩ, 1/8W
	R52	NRD187J-223NBU	RESISTOR	22KΩ, 1/8W
	R53	NRD187J-103NBU	RESISTOR	10KΩ, 1/8W
	R54	NRD187J-682NBU	RESISTOR	6.8KΩ, 1/8W
	R57	NRD187J-153NBU	RESISTOR	15KΩ, 1/8W
	R62	NRD187J-392NBU	RESISTOR	3.9KΩ, 1/8W
	R63	NRD187J-470NBU	RESISTOR	47Ω, 1/8W
	R64	NRD187J-182NBU	RESISTOR	1.8KΩ, 1/8W
	R65	NRD187J-221NBU	RESISTOR	220Ω, 1/8W
	R71	NRD187J-681NBU	RESISTOR	680Ω, 1/8W
	R72	NRD187J-120NBU	RESISTOR	12Ω, 1/8W
	R73	NRD187J-331NBU	RESISTOR	330Ω, 1/8W
	R82	NRD187J-680NBU	RESISTOR	68Ω, 1/8W
	R83	NRD187J-331NBU	RESISTOR	330Ω, 1/8W
	R84	NRD187J-123NBU	RESISTOR	12KΩ, 1/8W
	R85	NRD187J-123NBU	RESISTOR	12KΩ, 1/8W
	R86	NRD187J-331NBU	RESISTOR	330Ω, 1/8W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R101	NRD187J-182NBU	RESISTOR	1.8KΩ, 1/8W
	R102	NRD187J-222NBU	RESISTOR	2.2KΩ, 1/8W
	R104	QRD161J-393	RESISTOR	39KΩ, 1/6W
	C2	NCT02CH-5R6NBR	CAPACITOR	5.6PF
	C3	QCT25HH-101	CAPACITOR	100PF
	C4	NCT02CH-3R9NBR	CAPACITOR	3.9PF
	C5	NCB71HK-102NBR	CAPACITOR	0.001μF, 50V
	C6	NCX71CM-222NBR	CAPACITOR	0.0022μF, 16V
	C7	NCB71HK-102NBR	CAPACITOR	0.001μF, 50V
	C8	NCB71HK-102NBR	CAPACITOR	0.001μF, 50V
	C10	QETC1CM-336	E CAPACITOR	33μF, 16V
	C11	NCY71CM-103NBR	CAPACITOR	0.01μF, 16V
	C13	NCX71CM-222NBR	CAPACITOR	0.0022μF, 16V
	C14	PU57601-474ME	E CAPACITOR	0.47μF
	C15	QETC1CM-336	E CAPACITOR	33μF, 16V
	C16	NCX71CM-222NBR	CAPACITOR	0.0022μF, 16V
	C17	NCF71EZ-223NBR	CAPACITOR	0.022μF, 25V
	C19	NCY71CM-103NBR	CAPACITOR	0.01μF, 16V
	C20	NCY71CM-103NBR	CAPACITOR	0.01μF, 16V
	C21	NCB71HK-101NBR	CAPACITOR	100PF, 50V
	C24	QETC1HM-105	E CAPACITOR	1μF, 50V
	C25	NCX71CM-222NBR	CAPACITOR	0.0022μF, 16V
	C26	QFN31HK-222	M CAPACITOR	0.0022μF, 50V
	C27	QETC1HM-474	E CAPACITOR	0.47μF, 50V
	C29	NCS71HJ-470NBR	CAPACITOR	47PF, 50V
	C31	QETC1HM-335	E CAPACITOR	3.3μF, 50V
	C32	NCF71EZ-223NBR	CAPACITOR	0.022μF, 25V
	C33	QETC1HM-474	E CAPACITOR	0.47μF, 50V
	C41	NCB71HK-102NBR	CAPACITOR	0.001μF, 50V
	C43	NCX71CM-222NBR	CAPACITOR	0.0022μF, 16V
	C44	NCB71HK-102NBR	CAPACITOR	0.001μF, 50V
	C45	NCB71HK-102NBR	CAPACITOR	0.001μF, 50V
	C46	NCB71HK-102NBR	CAPACITOR	0.001μF, 50V
	C50	QETC1CM-336	E CAPACITOR	33μF, 16V
	C56	QETC1CM-336	E CAPACITOR	33μF, 16V
	C57	QEN41CM-336	NP E CAPACITOR	33μF, 16V
	or	QEN61CM-336	NP E CAPACITOR	33μF, 16V
	C58	NCS71HJ-100NBR	CAPACITOR	10PF, 50V
	C60	NCB71HK-102NBR	CAPACITOR	0.001μF, 50V
	C63	NCB71HK-102NBR	CAPACITOR	0.001μF, 50V
	C64	NCB71HK-391NBR	CAPACITOR	390PF, 50V
	L1	PU60025-1R0	COIL	1.0μH
	L2	PU60025-R82	COIL	0.82μH
	L3	PU60025-1R2	COIL	1.2μH
	L4	PU59152-8R2J	PEAKING COIL	8.2μH
	L5	PU59152-220J	PEAKING COIL	22μH
	L6	PU59152-6R8K	PEAKING COIL	6.8μH
	L7	PU59152-R22K	PEAKING COIL	0.22μH
	L9	PU59152-6R8K	PEAKING COIL	6.8μH
	CF1	PU49295-2	N FILTER, 5.5MHZ	
	CF3	PU32990-2	CERAMIC FILTER, 5.5MHZ	
	CF4	PU49295	CERAMIC FILTER, 5.5MHZ	
	CF5	PU32990-4	CERAMIC FILTER, 6.5MHZ	
	SAW1	PU60804	SAW FILTER	
	SAW2	PU60765	SAW FILTER	
	T1	PU60042-2	COIL, S TRAP 33.4MHZ	
	T2	PU60497	IF. TRANSFORMER, VCO 38.9MHZ	
	T4	PU59488	COIL, DET 5.5MHZ	
	T5	PU60046	IF. TRANSFORMER, SYNC 15.625MHZ	
	T8	PU60259	COIL, 2FH TRAP 250KHZ	
	JP1	PU59935-16	TERMINAL	

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#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R5	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R6	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R7	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R8	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R11	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R12	QRD161J-121	RESISTOR	120Ω, 1/6W
	R13	QRD161J-152	RESISTOR	1.5KΩ, 1/6W
	R14	QRD161J-562	RESISTOR	5.6KΩ, 1/6W
	R15	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R16	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R17	QRD161J-153	RESISTOR	15KΩ, 1/6W
	R18	QRD161J-101	RESISTOR	100Ω, 1/6W
	R19	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R20	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R22	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R26	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R32	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R33	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R34	QRD161J-103	RESISTOR, EG	10KΩ, 1/6W
	R34	QRD161J-222	RESISTOR, E	2.2KΩ, 1/6W
	R35	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R36	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R40	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R41	QRD161J-331	RESISTOR	330Ω, 1/6W
	R45	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R46	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R47	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R48	QRD161J-103	RESISTOR, E	10KΩ, 1/6W
	R51	QRD161J-560	RESISTOR	56Ω, 1/6W
	RA1	QRB047J-104	RESISTOR ARRAY	
	C2	QCBB1HK-102	CAPACITOR	0.001μF, 50V
	C3	QETC1CM-107	E CAPACITOR	100μF, 16V
	C4	QETC1CM-106	E CAPACITOR, E	10μF, 16V
	C5	QETC1CM-106	E CAPACITOR	10μF, 16V
	C6	QEK61HM-225	E CAPACITOR	2.2μF, 50V
	C7	QETC1CM-106	E CAPACITOR	10μF, 16V
	C8	QCBB1HK-102	CAPACITOR	0.001μF, 50V
	C9	QETC1CM-106	E CAPACITOR	10μF, 16V
	C13	QFN31HJ-153	M CAPACITOR	0.015μF, 50V
	C14	QFV81HJ-474	TF CAPACITOR	0.47μF, 50V
	or	QFZ9011-474	MM CAPACITOR	0.47μF
	C15	QETC1HM-106	E CAPACITOR	10μF, 50V
	C16	QCBB1HK-102	CAPACITOR	0.001μF, 50V
	C17	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C18	QCT25CH-220	CAPACITOR	22PF
	C19	QCT25CH-270	CAPACITOR	27PF
	C20	PU57601-335MCZ	E CAPACITOR	3.3μF
	C23	QETC1CM-106	E CAPACITOR	10μF, 16V
	C24	QETC1AM-107	E CAPACITOR	100μF, 10V
	C25	QETC1AM-336	E CAPACITOR	33μF, 10V
	C31	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C32	QCBB1HJ-910	CAPACITOR	91PF, 50V

≠⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	L1	PU59152-R22K	PEAKING COIL	0.22μH
	L2	PU59152-100J	PEAKING COIL	10μH
	L7	PU59152-1R0K	PEAKING COIL	1.0μH
	L8	PU59152-1R0K	PEAKING COIL	1.0μH
	L9	PU59152-2R7J	PEAKING COIL	2.7μH
	L10	PU59152-5R6J	PEAKING COIL	5.6μH
	or	PU59988-5R6JL	COIL	5.6μH
⚠	X1	PU58554-2	CRYSTAL RESONATOR, 4.0M	
	HD1	PU36378	HOLDER	
	WR1	PW30401-AB22T	COAXIAL CORD	
	WR2	PW30401-AE10S	COAXIAL CORD	
	WR3	PW30401-AE10S	COAXIAL CORD	
	CN2	PU58844-9	CAP HOUSING	
	CN3	PU58844-2	CAP HOUSING	
	CN4	PU58844-5	CAP HOUSING	
	CN5	PU58844-6	CAP HOUSING	
⚠	CP1	ICP-F10	CIRCUIT PROTECTOR	

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12. AUDIO BOARD ASSEMBLY ⟨09⟩

PWBA	PB20292L	AUDIO BOARD ASSY, E
PWBA	PB20292K	AUDIO BOARD ASSY, EG
IC1	AN3380NK	IC
IC2	TA7361AP	IC
IC3	PB20167A-01	FMA MODULE BOARD ASSY
IC101	UPC78N05	IC
Q1	2SC1740S(RS)	TRANSISTOR
Q2	2SC3311(RS)	TRANSISTOR
Q3	DTC114ES	TRANSISTOR
Q4	2SC1740S(RS)	TRANSISTOR
Q5	DTC114ES	TRANSISTOR
Q6	DTC114ES	TRANSISTOR
Q7	DTC114ES	TRANSISTOR
Q8	DTA114ES	TRANSISTOR
Q9	DTA114ES	TRANSISTOR
Q10	2SC1740S(RS)	TRANSISTOR
Q11	2SC1740S(RS)	TRANSISTOR
Q12	DTC143TS	TRANSISTOR
Q13	DTC143TS	TRANSISTOR
Q16	2SC3311(RS)	TRANSISTOR
Q17	DTA114ES	TRANSISTOR
Q18	DTC114ES	TRANSISTOR
Q20	DTA114ES	TRANSISTOR
Q23	DTA143TS	TRANSISTOR

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	Q101	2SD1764	TRANSISTOR	
	Q102	2SA854S(QR)	TRANSISTOR	
	Q103	2SA854S(QR)	TRANSISTOR	
	D1	1SS133	DIODE	
	or	MA165	DIODE	
	D3	1SS133	DIODE	
	or	MA165	DIODE	
	D5	1SS133	DIODE	
	or	MA165	DIODE	
	D6	1SS133	DIODE	
	or	MA165	DIODE	
	D7	1SS133	DIODE	
	or	MA165	DIODE	
	D8	1SS133	DIODE	
	or	MA165	DIODE	
	D9	HZ2BLL	ZENER DIODE	
	D12	1SS133	DIODE	
	or	MA165	DIODE	
	D16	1SS133	DIODE	
	or	MA165	DIODE	
	D17	1SS133	DIODE	
	or	MA165	DIODE	
	D101	HZ12A2	ZENER DIODE	
	D102	1SS133	DIODE	
	or	MA165	DIODE	
	R3	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R4	QRD161J-682	RESISTOR	6.8KΩ, 1/6W
	R5	QRD161J-151	RESISTOR	150Ω, 1/6W
	R6	QRD161J-152	RESISTOR	1.5KΩ, 1/6W
	R7	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R8	QRD161J-100	RESISTOR	10Ω, 1/6W
	R9	QVZ3518-473	V RESISTOR, BIAS ADJ	47KΩ
	R10	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R11	QRD161J-473	RESISTOR	47KΩ, 1/6W
	R12	QRD161J-101	RESISTOR	100Ω, 1/6W
	R13	QRD161J-273	RESISTOR	27KΩ, 1/6W
	R14	QRD161J-3R9	RESISTOR	3.9Ω, 1/6W
	R15	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R18	QRD161J-0R0	RESISTOR	0Ω, 1/6W
	R20	QRD161J-183	RESISTOR	18KΩ, 1/6W
	R21	QRD161J-270	RESISTOR	27Ω, 1/6W
	R22	QRD161J-470	RESISTOR	47Ω, 1/6W
	R23	QRD161J-303	RESISTOR	30KΩ, 1/6W
	R25	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R26	QRD161J-274	RESISTOR	270KΩ, 1/6W
	R27	QRD161J-471	RESISTOR	470Ω, 1/6W
	R28	QVZ3518-102	V RESISTOR, PB LEVEL ADJ	1KΩ
	R29	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R31	QRD161J-151	RESISTOR	150Ω, 1/6W
	R32	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R33	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R34	QRD161J-151	RESISTOR	150Ω, 1/6W
	R40	QVZ3518-222	V RESISTOR, EE LEVEL (L)	2.2KΩ
	R41	QVZ3518-222	V RESISTOR, EE LEVEL (R)	2.2KΩ

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R43	QRD161J-101	RESISTOR	100Ω, 1/6W
	R44	QRD161J-101	RESISTOR	100Ω, 1/6W
	R45	QRD161J-392	RESISTOR	3.9KΩ, 1/6W
	R46	QRD161J-332	RESISTOR	3.3KΩ, 1/6W
	R47	QRD161J-123	RESISTOR	12KΩ, 1/6W
	R48	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R49	QRD161J-274	RESISTOR	270KΩ, 1/6W
	R50	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R51	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R52	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R53	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R54	QRD161J-183	RESISTOR	18KΩ, 1/6W
	R55	QRD161J-392	RESISTOR	3.9KΩ, 1/6W
	R56	QRD161J-272	RESISTOR	2.7KΩ, 1/6W
	R57	QRD161J-181	RESISTOR	180Ω, 1/6W
	R58	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R59	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R60	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R62	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R63	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R64	QRD161J-331	RESISTOR	330Ω, 1/6W
	R65	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R66	QRD161J-6R8	RESISTOR	6.8Ω, 1/6W
	R67	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R68	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R70	QRD161J-273	RESISTOR	27KΩ, 1/6W
	R72	QRD161J-392	RESISTOR	3.9KΩ, 1/6W
	R73	QVZ3518-332	V RESISTOR, LEVEL IND (L)	3.3KΩ
	R74	QVZ3518-332	V RESISTOR, LEVEL IND (R)	3.3KΩ
	R76	QRD161J-151	RESISTOR	150Ω, 1/6W
	R80	QVZ3518-331	V RESISTOR, FM REC ADJ	330Ω
	R81	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R82	QRD161J-153	RESISTOR	15KΩ, 1/6W
	R83	QRD162J-151	RESISTOR	150Ω, 1/6W
	R84	QRD162J-151	RESISTOR	150Ω, 1/6W
	R85	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R86	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R87	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R88	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R89	QRD161J-820	RESISTOR	82Ω, 1/6W
	R91	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R101	QRD161J-182	RESISTOR	1.8KΩ, 1/6W
	R103	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R104	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R105	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R106	QRD161J-681	RESISTOR	680Ω, 1/6W
	R107	QRD161J-152	RESISTOR	1.5KΩ, 1/6W
	R108	QRD161J-391	RESISTOR	390Ω, 1/6W
	R109	QRD161J-332	RESISTOR	3.3KΩ, 1/6W
	R110	QRD161J-153	RESISTOR	15KΩ, 1/6W
	C1	QETC1CM-106	E CAPACITOR	10μF, 16V
	C2	QETC1AM-476	E CAPACITOR	47μF, 10V
	C3	QEP61CM-106	NP E CAPACITOR	10μF, 16V
	C4	QETC1CM-106	E CAPACITOR	10μF, 16V
	C5	QETC1CM-226	E CAPACITOR	22μF, 16V
	C6	QETC1AM-336	E CAPACITOR	33μF, 10V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C7	QETC1AM-476	E CAPACITOR	47μF, 10V
	C8	QCBB1HK-102	CAPACITOR	0.001μF, 50V
	C9	QCBB1HK-101	CAPACITOR	100PF, 50V
	C10	QETC1AM-336	E CAPACITOR	33μF, 10V
	C11	QETC1AM-107	E CAPACITOR	100μF, 10V
	C12	QETC1CM-226	E CAPACITOR	22μF, 16V
	C13	QETB1CM-106	E CAPACITOR	10μF, 16V
	C14	QEP61CM-106	NP E CAPACITOR	10μF, 16V
	C15	QETB1AM-476	E CAPACITOR	47μF, 10V
	C16	QETC1CM-106	E CAPACITOR	10μF, 16V
	C17	QCBB1HJ-331	CAPACITOR	330PF, 50V
	C18	QFV71HJ-223	TF CAPACITOR	0.022μF, 50V
	or	QFN31HJ-223	M CAPACITOR	0.022μF, 50V
	C19	QCC11EJ-222	CAPACITOR	0.0022μF, 25V
	C20	QCC11EJ-102	CAPACITOR	0.001μF, 25V
	C21	QEK61EM-475	E CAPACITOR	4.7μF, 25V
	C24	QCBB1HJ-561	CAPACITOR	560PF, 50V
	C25	QETC1HM-225	E CAPACITOR	2.2μF, 50V
	C26	QETC1AM-336	E CAPACITOR	33μF, 10V
	C27	QETC0JM-476	E CAPACITOR	47μF, 6.3V
	C28	QFN31HJ-104	M CAPACITOR	0.1μF, 50V
	or	QFV71HJ-104	TF CAPACITOR	0.1μF, 50V
	C29	QFV71HJ-473	M CAPACITOR	0.047μF, 50V
	C30	QETC1HM-105	E CAPACITOR	1μF, 50V
	C32	QFN31HJ-123	M CAPACITOR	0.012μF, 50V
	C33	QFV71HJ-274	M CAPACITOR	0.27μF, 50V
	C34	QEB51CM-226	E CAPACITOR	22μF, 16V
	C35	QEB51HM-105	E CAPACITOR	1μF, 50V
	C36	QETB1CM-106	E CAPACITOR	10μF, 16V
	C37	QETC1AM-336	E CAPACITOR	33μF, 10V
	C38	QETC1CM-476	E CAPACITOR	47μF, 16V
	C39	QETC1AM-336	E CAPACITOR	33μF, 10V
	C40	QETC1CM-106	E CAPACITOR	10μF, 16V
	C41	QETC1CM-476	E CAPACITOR	47μF, 16V
	C42	QETC1HM-225	E CAPACITOR	2.2μF, 50V
	C43	QETC1CM-106	E CAPACITOR	10μF, 16V
	C44	QETC1HM-225	E CAPACITOR	2.2μF, 50V
	C45	QEN61HM-225	NP E CAPACITOR	2.2μF, 50V
	C46	QEN61HM-225	NP E CAPACITOR	2.2μF, 50V
	C47	QETC1HM-225	E CAPACITOR	2.2μF, 50V
	C49	QCF31HP-223	CAPACITOR	0.022μF, 50V
	C50	QFV71HJ-104	TF CAPACITOR	0.1μF, 50V
	or	QFN31HJ-104	M CAPACITOR	0.1μF, 50V
	C51	QFV71HJ-104	TF CAPACITOR	0.1μF, 50V
	or	QFN31HJ-104	M CAPACITOR	0.1μF, 50V
	C52	QFV71HJ-104	TF CAPACITOR	0.1μF, 50V
	or	QFN31HJ-104	M CAPACITOR	0.1μF, 50V
	C53	QCF31HP-223	CAPACITOR	0.022μF, 50V
	C54	QEK60JM-107	E CAPACITOR	100μF, 6.3V
	C55	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C56	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	C57	QCSB1HJ-330	CAPACITOR	33PF, 50V
	C58	QCBB1HJ-331	CAPACITOR	330PF, 50V
	C59	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	C60	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C61	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C62	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C63	QCC11EJ-272	CAPACITOR	0.0027μF, 25V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C66	QETC1CM-106	E CAPACITOR	10μF, 16V
	C67	QETC1CM-106	E CAPACITOR	10μF, 16V
	C68	QETC1HM-225	E CAPACITOR	2.2μF, 50V
	C69	QETC1HM-225	E CAPACITOR	2.2μF, 50V
	C70	QCBC1HJ-391	CAPACITOR	390PF, 50V
	C71	QCBB1HJ-391	CAPACITOR	390PF, 50V
	C72	QCBB1HK-561	CAPACITOR	560PF, 50V
	C73	QCBB1HK-561	CAPACITOR	560PF, 50V
	C74	QCC11EJ-332	CAPACITOR	0.0033μF, 25V
	C75	QCC11EJ-102	CAPACITOR	0.001μF, 25V
	C76	QFV71HJ-333	TF CAPACITOR	0.033μF, 50V
	or	QFN31HJ-333	M CAPACITOR	0.033μF, 50V
	C77	QETC1CM-106	E CAPACITOR	10μF, 16V
	C78	QFV71HJ-104	TF CAPACITOR	0.1μF, 50V
	or	QFN31HJ-104	M CAPACITOR	0.1μF, 50V
	C79	QCC11EJ-273	CAPACITOR	0.027μF, 25V
	C101	QEK61EM-336	E CAPACITOR	33μF, 25V
	C102	QCBB1HK-102	CAPACITOR	0.001μF, 50V
	C103	QEK61HM-105	E CAPACITOR	1μF, 50V
	C104	QETC1CM-106	E CAPACITOR	10μF, 16V
	C105	QFV81HJ-153	M CAPACITOR	0.015μF, 50V
	C106	QCBB1HJ-681	CAPACITOR	680PF, 50V
	C107	QCBB1HJ-391	CAPACITOR, EG	390PF, 50V
	L1	PU54223-101J	PEAKING COIL	100μH
	L3	PU58308-392J	PEAKING COIL	3.9mH
	L4	PU54223-221J	PEAKING COIL	220μH
	L5	PU54223-101J	PEAKING COIL	100μH
	BPF1	PU60610	BAND PASS FILTER	
	BPF2	PU60611	BAND PASS FILTER	
⚠	T1	PU60320	OSC TRANSFORMER	
⚠	T2	PU60321	OSC TRANSFORMER	
	HN1	PU58018-1-2	PWB HINGE, X2	
⚠	HS1	PU60185	HEAT SINK, FOR Q101	
	HS2	PU60261	HEAT SINK, FOR IC101	
	SCW1	DPSP3008Z	SCREW, FOR Q101	
	SLD1	PU59960	P/R AMP SHIELD1	
	SLD2	PU59961	P/R AMP SHIELD2	
	SLD3	PQ43345-1-1	SHIELD PLATE	
	TP31	PU55774	TEST PIN, X7, (31-34, 53, 54, GND)	
	CN1	PU58844-3Y	CAP HOUSING	
	CN2	PU59555-8	CAP HOUSING	
	CN3	PU58844-2	CAP HOUSING	
	CN4	PU59555-5	CAP HOUSING	
	CN5	PU58844-4	CAP HOUSING	
	CN6	PU58844-2	CAP HOUSING	
	CN7	PU58844-4	CAP HOUSING	
	CN8	PU58844-4	CAP HOUSING	
	CN9	PU58844-8	CAP HOUSING	
	CN10	PU59555-5	CAP HOUSING, E	
	CN10	PU58844-5	CAP HOUSING, EG	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	CN11	PU58844-3	CAP HOUSING
	CN12	PU59555-6	CAP HOUSING
	CN14	PU58844-2Y	CAP HOUSING
	CN16	PU58844-2	CAP HOUSING
⚠	CP1	ICP-F20	CIRCUIT PROTECTOR

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#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	Q302	2SA933S(RS)	TRANSISTOR
	or	2SA1309RTA	TRANSISTOR
	Q303	2SA933S(RS)	TRANSISTOR
	or	2SA1309RTA	TRANSISTOR
	Q304	2SB810H, J	TRANSISTOR
	Q305	DTA124ES	TRANSISTOR
	Q306	2SA933S(RS)	TRANSISTOR
	or	2SA1309RTA	TRANSISTOR
	Q307	2SC1740S(QRS)	TRANSISTOR
	Q308	2SC1740S(QRS)	TRANSISTOR
	Q309	2SC1740S(QRS)	TRANSISTOR
	Q311	2SC1740S(QRS)	TRANSISTOR
	Q312	2SC1740S(QRS)	TRANSISTOR
	Q313	2SC1740S(QRS)	TRANSISTOR
	Q314	2SC1740S(QRS)	TRANSISTOR
	Q315	2SC1740S(QRS)	TRANSISTOR
	Q316	2SA933S(RS)	TRANSISTOR
	or	2SA1309RTA	TRANSISTOR
	Q317	DTC144WS	TRANSISTOR
	Q318	2SA933S(RS)	TRANSISTOR
	or	2SA1309RTA	TRANSISTOR
	Q319	2SC1740S(QRS)	TRANSISTOR
	D301	1SS133	DIODE
	or	MA165	DIODE
	D302	1SS133	DIODE
	or	MA165	DIODE
	D303	1SS133	DIODE
	or	MA165	DIODE
	D304	1SS133	DIODE
	or	MA165	DIODE
	D305	1SS133	DIODE
	or	MA165	DIODE
	D306	1SS133	DIODE
	or	MA165	DIODE
	D307	1SS133	DIODE
	or	MA165	DIODE
	D308	1SS133	DIODE
	or	MA165	DIODE
	D309	1SS133	DIODE
	or	MA165	DIODE
	D310	1SS133	DIODE
	or	MA165	DIODE
	D311	1SS133	DIODE
	or	MA165	DIODE
	D312	1SS133	DIODE
	or	MA165	DIODE
	D313	1SS133	DIODE
	or	MA165	DIODE
	D314	1SS133	DIODE
	or	MA165	DIODE
	D315	1SS133	DIODE
	or	MA165	DIODE
	D316	1SS133	DIODE
	or	MA165	DIODE
	D317	1SS133	DIODE
	or	MA165	DIODE
	D318	1SS133	DIODE
	or	MA165	DIODE
	D319	1SS133	DIODE

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	D320	1SS133	DIODE
	or	MA165	DIODE
	D321	1SS133	DIODE
	or	MA165	DIODE
	D322	1SS133	DIODE
	or	MA165	DIODE
	D323	1SS133	DIODE
	or	MA165	DIODE
	D324	1SS133	DIODE
	or	MA165	DIODE
	D325	1SS133	DIODE
	or	MA165	DIODE
	D326	1SS133	DIODE
	or	MA165	DIODE
	D327	1SS133	DIODE
	or	MA165	DIODE
	D328	1SS133	DIODE
	or	MA165	DIODE
	D329	1SS133	DIODE
	or	MA165	DIODE
	D330	1SS133	DIODE
	or	MA165	DIODE
	D331	1SS133	DIODE
	or	MA165	DIODE
	R301	QRD161J-472	RESISTOR 4.7KΩ, 1/6W
	R302	QRD161J-680	RESISTOR 68Ω, 1/6W
	R303	QRD127J-391	RESISTOR 390Ω, 1/2W
	R304	QRD162J-750	RESISTOR 75Ω, 1/6W
	R305	QRD161J-472	RESISTOR 4.7KΩ, 1/6W
	R306	QRD181J-561	RESISTOR 560Ω, 1/8W
	R307	QRD161J-750	RESISTOR 75Ω, 1/6W
	R308	QRD181J-561	RESISTOR 560Ω, 1/8W
	R309	QRD161J-750	RESISTOR 75Ω, 1/6W
	R310	QRD161J-472	RESISTOR 4.7KΩ, 1/6W
	R311	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R312	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R313	QRD161J-472	RESISTOR 4.7KΩ, 1/6W
	R314	QRD161J-472	RESISTOR 4.7KΩ, 1/6W
	R315	QRD161J-332	RESISTOR 3.3KΩ, 1/6W
	R316	QRD161J-473	RESISTOR 47KΩ, 1/6W
	R317	QRD161J-103	RESISTOR 10KΩ, 1/6W
	R319	QRD161J-103	RESISTOR 10KΩ, 1/6W
	R320	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R321	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R322	QRD161J-222	RESISTOR 2.2KΩ, 1/6W
	R325	QRD161J-222	RESISTOR 2.2KΩ, 1/6W
	R326	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R327	QRD161J-102	RESISTOR 1KΩ, 1/6W
	R328	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R329	QRD161J-392	RESISTOR 3.9KΩ, 1/6W
	R330	QRD161J-272	RESISTOR 2.7KΩ, 1/6W
	R331	QRD161J-331	RESISTOR 330Ω, 1/6W
	R332	QRD161J-101	RESISTOR 100Ω, 1/6W
	R333	QRD161J-272	RESISTOR 2.7KΩ, 1/6W
	R335	QRD161J-223	RESISTOR 22KΩ, 1/6W
	R337	QRD161J-182	RESISTOR 1.8KΩ, 1/6W
	R338	QRD161J-103	RESISTOR 10KΩ, 1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R339	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R340	QRD161J-272	RESISTOR	2.7KΩ, 1/6W
	R341	QRD161J-562	RESISTOR	5.6KΩ, 1/6W
	R342	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R343	QRD161J-562	RESISTOR	5.6KΩ, 1/6W
	R344	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R345	QRD161J-393	RESISTOR	39KΩ, 1/6W
	R346	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R347	QRD161J-101	RESISTOR	100Ω, 1/6W
	R348	QRD161J-560	RESISTOR	56Ω, 1/6W
	R349	QRD161J-560	RESISTOR	56Ω, 1/6W
	R351	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R352	QRD161J-683	RESISTOR	68KΩ, 1/6W
	R353	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R354	QRD161J-123	RESISTOR	12KΩ, 1/6W
	R355	QRD162J-102	RESISTOR	1KΩ, 1/6W
	C301	QEK61CM-106	E CAPACITOR	10μF, 16V
	C302	QEK61CM-106	E CAPACITOR	10μF, 16V
	C303	QEK61CM-106	E CAPACITOR	10μF, 16V
	C304	QEK61CM-106	E CAPACITOR	10μF, 16V
	C305	QEK61CM-106	E CAPACITOR	10μF, 16V
	C306	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C307	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C308	QEK60JM-476	E CAPACITOR	47μF, 6.3V
	C309	QEK61CM-226	E CAPACITOR	22μF, 16V
	C310	QEK61CM-226	E CAPACITOR	22μF, 16V
	C311	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C312	QEK61CM-476	E CAPACITOR	47μF, 16V
	C313	QETB1AM-477	E CAPACITOR	470μF, 10V
	C314	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C315	QEK61CM-476	E CAPACITOR	47μF, 16V
	C316	QETB0JM-477	E CAPACITOR	470μF, 6.3V
	C317	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C318	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C319	QEK61CM-476	E CAPACITOR	47μF, 16V
	C320	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C321	QEK61EM-476	E CAPACITOR	47μF, 25V
	C322	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C323	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C324	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C325	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C327	QCSB1HJ-560	CAPACITOR	56PF, 50V
	C328	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C329	QEK61CM-106	E CAPACITOR	10μF, 16V
	C330	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C332	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C333	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C334	QEK61CM-106	E CAPACITOR	10μF, 16V
	C335	QCSB1HJ-560	CAPACITOR	56PF, 50V
	C336	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C337	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C338	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C339	QEK61HM-105	E CAPACITOR	1μF, 50V
	C341	QEK60JM-476	E CAPACITOR	47μF, 6.3V
	C342	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C343	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C344	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C345	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C346	QCSB1HJ-390	CAPACITOR	39PF, 50V
	C347	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C350	QEK61AM-226	E CAPACITOR	22μF, 10V
	C353	QCBB1HJ-561	CAPACITOR	560PF, 50V
	C354	QCSC1HJ-330	CAPACITOR	33PF, 50V
	L301	PU48530-101K	PEAKING COIL	100μH
	L302	PU48530-101K	PEAKING COIL	100μH
	L303	PU48530-101K	PEAKING COIL	100μH
	L304	PU48530-101K	PEAKING COIL	100μH
	L306	PU48530-101K	PEAKING COIL	100μH
	L307	PU59152-180J	PEAKING COIL	18μH
	L308	PU48530-101K	PEAKING COIL	100μH
	L309	PU48530-101K	PEAKING COIL	100μH
	L310	PU59153-822J	PEAKING COIL	8.2mH
	L311	PU59152-100J	INDUCTOR	10μH
	EQ301	PU54838	EQUALIZER	
	BPF301	PU57072	BAND PASS FILTER	
	SLD1	PQ43207	SHIELD COVER	

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#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	Q4	DTC114ES	TRANSISTOR	
		or 2SC3402	TRANSISTOR	
		or UN4211	TRANSISTOR	
	Q5	DTC114ES	TRANSISTOR	
		or UN4211	TRANSISTOR	
		or 2SC3402	TRANSISTOR	
	Q6	DTC114ES	TRANSISTOR	
		or 2SC3402	TRANSISTOR	
		or UN4211	TRANSISTOR	
	Q7	DTC144ES	TRANSISTOR	
		or 2SC3399	TRANSISTOR	
		or UN4213	TRANSISTOR	
	Q8	DTC114ES	TRANSISTOR	
		or UN4211	TRANSISTOR	
		or 2SC3402	TRANSISTOR	
	Q9	2SD1450S, T	TRANSISTOR	
		or 2SD1292(QR)	TRANSISTOR	
	Q10	2SD1450S, T	TRANSISTOR	
		or 2SD1292(QR)	TRANSISTOR	
	D1	1SS133	DIODE	
	D2	1SS133	DIODE	
	D3	1SS133	DIODE	
	D4	1SS133	DIODE	
	D6	1SS133	DIODE	
	R1	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R2	QVZ3518-103	V RESISTOR, SEPARATION ADJ	10KΩ
	R3	QRD161J-153	RESISTOR	15KΩ, 1/6W
	R4	QRD161J-331	RESISTOR	330Ω, 1/6W
	R5	QRD161J-821	RESISTOR	820Ω, 1/6W
	R6	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R7	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R8	QRD161J-154	RESISTOR	150KΩ, 1/6W
	R9	QRD161J-271	RESISTOR	270Ω, 1/6W
	R10	QRD161J-273	RESISTOR	27KΩ, 1/6W
	R11	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R12	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R13	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R14	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R15	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R16	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R17	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R21	QVZ3518-332	V RESISTOR, AUDIO L LEVEL	3.3KΩ
	R22	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R23	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R24	QVZ3518-332	V RESISTOR, AUDIO R LEVEL	3.3KΩ
	R25	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R26	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R27	QRD161J-821	RESISTOR	820Ω, 1/6W
	R28	QRD161J-821	RESISTOR	820Ω, 1/6W
	C1	QETC1CM-106	E CAPACITOR	10μF, 16V
	C2	QFN31HK-392	M CAPACITOR	0.0039μF, 50V
	C3	QFN31HK-392	M CAPACITOR	0.0039μF, 50V
	C4	QFN31HK-392	M CAPACITOR	0.0039μF, 50V
	C5	QETC1CM-106	E CAPACITOR	10μF, 16V
	C6	QETC1CM-106	E CAPACITOR	10μF, 16V
	C7	QETC1CM-476	E CAPACITOR	47μF, 16V
	C8	QCF31HP-223	CAPACITOR	0.022μF, 50V
	C9	QCC11EK-473	CAPACITOR	0.047μF, 25V
	C10	QFP31HJ-102	M CAPACITOR	0.001μF, 50V
	C11	QETC1CM-477	E CAPACITOR	470μF, 16V
	C12	QCC11EK-473	CAPACITOR	0.047μF, 25V
	C13	QETC1CM-106	E CAPACITOR	10μF, 16V
	C14	QETC1CM-106	E CAPACITOR	10μF, 16V
	C15	QETC1CM-336	E CAPACITOR	33μF, 16V
	C16	QETC1CM-107	E CAPACITOR	100μF, 16V
	C17	QETC1HM-105	E CAPACITOR	1μF, 50V
	C18	QETC1CM-476	E CAPACITOR	47μF, 16V
	C19	QFN31HJ-123	M CAPACITOR	0.012μF, 50V
	C20	QETC1CM-106	E CAPACITOR	10μF, 16V
	C30	QFN31HJ-123	M CAPACITOR	0.012μF, 50V
	BPF1	PU58226	BAND PASS FILTER	
	CF1	PU52775	CERAMIC FILTER, 5.74MHZ	
	CF2	PU52775-2	CERAMIC FILTER, 5.74MHZ	
	T1	PU59489	COIL	
	T2	PU59490	COIL	
	T3	PU59243	FH TRAP	
	T4	PU59243	FH TRAP	
	CN1	PU58844-6	CAP HOUSING	
	CN4	PU58844-2	CAP HOUSING	

16. TIMER BOARD ASSEMBLY ⟨20⟩

PWBA		PB20250X	TIMER BOARD ASSY, E
PWBA		PB20250A-01	TIMER BOARD ASSY, EG
IC1		UPD75216ACW-285	IC
	or	UPD75216ACW-194	IC
IC2		S-8053HNB	IC
IC301		SDA5642	IC, EG
Q1		2SD1863(QR)	TRANSISTOR
Q2		2SC3311A(RS)	TRANSISTOR
	or	2SC3199(GB)-TJK	TRANSISTOR
Q3		DTC124ES	TRANSISTOR
Q4		2SC3311A(RS)	TRANSISTOR
	or	2SC3199(GB)-TJK	TRANSISTOR
Q5		DTC124ES	TRANSISTOR
Q6		DTC124ES	TRANSISTOR
D1		RD9.1ES-T1B2	ZENER DIODE
	or	HZS9.1EB2	ZENER DIODE
D2		DA210S	DIODE

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	D3	MTZJ4.7C	ZENER DIODE	
	or	RD4.7ES-T1B3	ZENER DIODE	
	D4	MTZ8.2B	ZENER DIODE	
	or	RD8.2ES-T1B2	ZENER DIODE	
	D5	MTZ8.2B	ZENER DIODE	
	or	RD8.2ES-T1B2	ZENER DIODE	
	D6	1SS133	DIODE	
	or	MA165	DIODE	
	D7	1SS133	DIODE	
	or	MA165	DIODE	
	D8	1SS133	DIODE	
	or	MA165	DIODE	
	D9	1SS133	DIODE	
	or	MA165	DIODE	
	D10	1SS133	DIODE	
	or	MA165	DIODE	
	D25	1SS133	DIODE	
	D26	1SS133	DIODE	
	D29	1SS133	DIODE	
	D30	1SS133	DIODE	
	D35	1SS133	DIODE	
	R1	QRD161J-121	RESISTOR	120Ω, 1/6W
	R2	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R3	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R4	QRD161J-682	RESISTOR	6.8KΩ, 1/6W
	R5	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R6	QRD161J-151	RESISTOR	150Ω, 1/6W
	R7	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R8	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R9	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R10	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R11	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R12	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R13	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R14	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R15	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R16	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R17	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R18	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R19	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R20	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R21	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R22	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R23	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R24	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R25	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R26	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R29	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R30	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R31	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R32	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R33	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R34	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R35	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R36	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R37	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R38	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R39	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R40	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R41	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R42	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R43	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R44	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R45	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
	R46	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R47	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R49	QRD161J-272	RESISTOR	2.7KΩ, 1/6W
	R50	QRD161J-271	RESISTOR	270Ω, 1/6W
	R51	QRD161J-271	RESISTOR	270Ω, 1/6W
	R301	QRD161J-824	RESISTOR, EG	820KΩ, 1/6W
	R302	QRD161J-101	RESISTOR, EG	100Ω, 1/6W
	R303	QRD161J-562	RESISTOR, EG	5.6KΩ, 1/6W
	R304	QRD161J-104	RESISTOR, EG	100KΩ, 1/6W
	R305	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R306	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R307	QRD161J-105	RESISTOR, EG	1MΩ, 1/6W
	R308	QRD161J-824	RESISTOR, EG	820KΩ, 1/6W
	R309	QRD161J-104	RESISTOR, EG	100KΩ, 1/6W
	R310	QRD161J-202	RESISTOR, EG	2KΩ, 1/6W
	RA1	QRB067J-224	RESISTOR ARRAY	
	or	QRB069J-224C	RESISTOR ARRAY	
	or	QRB069J-224	RESISTOR ARRAY	
	RA2	QRB067J-104	RESISTOR ARRAY	
	or	QRB069J-104	RESISTOR ARRAY	
	or	QRB069J-104C	RESISTOR ARRAY	
	RA3	QRB047J-333	RESISTOR ARRAY	
	or	QRB049J-333C	RESISTOR ARRAY	
	or	QRB049J-333	RESISTOR ARRAY	
	RA4	QRB037J-104	RESISTOR ARRAY	
	or	QRB039J-104	RESISTOR ARRAY	
	or	QRB039J-104C	RESISTOR ARRAY	
	C1	QETC1CM-336	E CAPACITOR	33μF, 16V
	C2	QETC1HM-335	E CAPACITOR	3.3μF, 50V
	C3	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	C4	QEA40HZ-105	E CAPACITOR (DOUBLE), E	1μF, 5.5V
	C4	PU60676-473	E CAPACITOR, EG	0.047μF
	or	QEA40HZ-473	E CAPACITOR (DOUBLE), EG	0.047μF, 5.5V
	C5	QETC1AM-336	E CAPACITOR	33μF, 10V
	C6	QETC0JM-336	E CAPACITOR	33μF, 6.3V
	C7	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C8	QETC1CM-106	E CAPACITOR	10μF, 16V
	C9	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C10	PU57672-200	TRIMMER CAPACITOR, VXO	20PF
	C11	QCT30CH-120	CAPACITOR	12PF
	C301	QFN31HJ-103	M CAPACITOR, EG	0.01μF, 50V
	C302	QFN31HJ-333	M CAPACITOR, EG	0.033μF, 50V
	C303	QFN31HJ-103	M CAPACITOR, EG	0.01μF, 50V
	C304	QETC1HM-104	E CAPACITOR, EG	0.1μF, 50V
	C305	QCBB1HJ-151	CAPACITOR, EG	150PF, 50V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	L1	PU48530-101K	PEAKING COIL	100μH
⚠	X1	PU60226-2	CRYSTAL RESONATOR	
	TP1	PU56008	TEST PIN, X3(1-3)	
	TP2	PU56008	TEST PIN	
	TP3	PU56008	TEST PIN, TEST	
	CN1	PU59555-8	CAP HOUSING	
	CN2	PU58844-9	CAP HOUSING	
	CN3	PU58844-6	CAP HOUSING	
	CN4	PU59555-12	CAP HOUSING	
	CN5	PU58844-3	CAP HOUSING	
	CN6	PU58844-2	CAP HOUSING	
	CN11	PU58844-2	CAP HOUSING	
	CN12	PU58844-2	CAP HOUSING	
	CN301	PU58844-6	CAP HOUSING	
⚠	CP1	ICP-F10	CIRCUIT PROTECTOR	

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17. OPERATION BOARD ASSEMBLY ⟨22⟩

PWBA	PB20253A-01	OPERATION BOARD ASSY	
R201	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
R202	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
R203	QRD161J-332	RESISTOR	3.3KΩ, 1/6W
R204	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
R205	QRD161J-103	RESISTOR	10KΩ, 1/6W
R206	QRD161J-223	RESISTOR	22KΩ, 1/6W
R208	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
R209	QRD161J-332	RESISTOR	3.3KΩ, 1/6W
R210	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
R211	QRD161J-103	RESISTOR	10KΩ, 1/6W
R212	QRD161J-223	RESISTOR	22KΩ, 1/6W
R215	QRD161J-332	RESISTOR	3.3KΩ, 1/6W
R216	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
S1	PU57550	TACT SWITCH, 1	
or	PU53598	TACT SWITCH	
S2	PU57550	TACT SWITCH, 2	
or	PU53598	TACT SWITCH	
S3	PU57550	TACT SWITCH, 3	
or	PU53598	TACT SWITCH	
S4	PU57550	TACT SWITCH, 4	
or	PU53598	TACT SWITCH	
S5	PU57550	TACT SWITCH, 5	
or	PU53598	TACT SWITCH	
S6	PU57550	TACT SWITCH, 6	
or	PU53598	TACT SWITCH	
S7	PU57550	TACT SWITCH, 7	
or	PU53598	TACT SWITCH	
S8	PU57550	TACT SWITCH, 8/DAILY	
or	PU53598	TACT SWITCH	
S9	PU57550	TACT SWITCH, 9/REPEAT	
or	PU53598	TACT SWITCH	
S10	PU57550	TACT SWITCH, 0/AUX	
or	PU53598	TACT SWITCH	
S11	PU57550	TACT SWITCH, GO TO	
or	PU53598	TACT SWITCH	
S12	PU57550	TACT SWITCH, C. MEMORY	
or	PU53598	TACT SWITCH	
S13	PU57550	TACT SWITCH, C. RESET	
or	PU53598	TACT SWITCH	
S14	PU57550	TACT SWITCH, DISP	
or	PU53598	TACT SWITCH	
S15	PU57550	TACT SWITCH, REC/OTR	
or	PU53598	TACT SWITCH	
S16	PU57550	TACT SWITCH, TIMER	
or	PU53598	TACT SWITCH	
S17	PU57550	TACT SWITCH, CH+/NEXT	
or	PU53598	TACT SWITCH	
S18	PU57550	TACT SWITCH, CH−/BACK	
or	PU53598	TACT SWITCH	
S19	PU57550	TACT SWITCH, SEARCH	
or	PU53598	TACT SWITCH	
S20	PU57550	TACT SWITCH, VPS/CH	
or	PU53598	TACT SWITCH	
S21	PU57550	TACT SWITCH, CANCEL/SKIP	
or	PU53598	TACT SWITCH	
S22	PU57550	TACT SWITCH, STORE	
or	PU53598	TACT SWITCH	
S23	PU57550	TACT SWITCH, FINE+	
S23 or	PU53598	TACT SWITCH	
S24	PU57550	TACT SWITCH, FINE−	
or	PU53598	TACT SWITCH	
S25	PU57550	TACT SWITCH, C. ADJ	
or	PU53598	TACT SWITCH	
S26	PU57550	TACT SWITCH, PROG	
or	PU53598	TACT SWITCH	
S27	PU57550	TACT SWITCH, SP/LP	
or	PU53598	TACT SWITCH	
S29	PU57550	TACT SWITCH, SIMUL	
or	PU53598	TACT SWITCH	
S201	PU57550	TACT SWITCH, STOP	
or	PU53598	TACT SWITCH	
S202	PU57550	TACT SWITCH, PAUSE/STILL	
or	PU53598	TACT SWITCH	
S203	PU57550	TACT SWITCH, PLAY/X2	
or	PU53598	TACT SWITCH	
S204	PU57550	TACT SWITCH, REW	
or	PU53598	TACT SWITCH	
S205	PU57550	TACT SWITCH, FF	
or	PU53598	TACT SWITCH	
S206	PU57550	TACT SWITCH, SEARCH(−)	
or	PU53598	TACT SWITCH	
S207	PU57550	TACT SWITCH, SEARCH(+)	
or	PU53598	TACT SWITCH	
S209	PU57550	TACT SWITCH, INSERT	
or	PU53598	TACT SWITCH	
S210	PU57550	TACT SWITCH, S-VHS	
or	PU53598	TACT SWITCH	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	S211	PU57550	TACT SWITCH, ERASE
	or	PU53598	TACT SWITCH
	S212	PU57550	TACT SWITCH, MARK
	or	PU53598	TACT SWITCH
	S213	PU57550	TACT SWITCH, A. MON
	or	PU53598	TACT SWITCH
	S214	PU57550	TACT SWITCH, MIX
	or	PU53598	TACT SWITCH
	S217	PU57550	TACT SWITCH, A. DUB
	or	PU53598	TACT SWITCH
	S219	PU57550	TACT SWITCH, EJECT
	or	PU53598	TACT SWITCH
	CN1	PU60566-116	FPC CONNECTOR

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18. SW/JACK BOARD ASSEMBLY ⟨26⟩⟨36⟩

PWBA	PB10153C-02	SW/JACK BOARD ASSY, E
PWBA	PB10153A-02	SW/JACK BOARD ASSY, EG

— SW BOARD ASSEMBLY⟨26⟩ —

PWBA1	PB10153A1-03	SWITCH BOARD ASSY	
D201	SLH-34VT3F	LE DIODE	
R200	QRD161J-102	RESISTOR	1KΩ, 1/6W
R201	QRD161J-331	RESISTOR	330Ω, 1/6W
R213	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
R401	QRD161J-823	RESISTOR	82KΩ, 1/6W
R402	QRD161J-333	RESISTOR	33KΩ, 1/6W
R403	QRD161J-333	RESISTOR	33KΩ, 1/6W
S215	PU57550	TACT SWITCH, POWER	
or	PU53598	TACT SWITCH	
S401	PU58488-1-1	SLIDE SWITCH, INPUT SEL	
S405	PU58486-1-1	SLIDE SWITCH, EDIT	
S407	PU58488-1-1	SLIDE SWITCH, LEVEL IND	
S408	PU58486-1-1	SLIDE SWITCH, NORMAL AUDIO/REC	
S409	PU58486-1-1	SLIDE SWITCH, ALC	
S410	PU58486-1-1	SLIDE SWITCH, AC ONLINE	
S418	PU58486-1-1	SLIDE SWITCH, VIDEO OUT	
HD1	PQM30038-3	LED HOLDER	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION

— JACK BOARD ASSEMBLY⟨36⟩ —

PWBA2	PB10153A2-03	JACK PWB ASS'Y, EG	
PWBA2	PB10153B2-03	JACK BOARD ASSY, E	
R231	QRD161J-103	RESISTOR	10KΩ, 1/6W
R404	PU60565	V RESISTOR	
L1	PU59152-390J	PEAKING COIL, EG	39μH
L2	PU59152-390J	PEAKING COIL, EG	39μH
ETH1	PQ43763	EARTH PLATE, EG	
J401	PU58356-2	JACK (HEADPHONE)	
J402	PU58355-2	MIC JACK	

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19. DISPLAY/STEP BOARD ASSY ⟨27⟩⟨37⟩

PWBA	PB10155G	DIS/STEP BOARD ASSY, EG
PWBA	PB10155J	DIS/STEP BOARD ASSY, E

— DISPALY BOARD ASSEMBLY⟨27⟩ —

PWBA1	PB10155G1	DISPLAY BOARD ASSY, EG	
PWBA1	PB10155J1	DISPLAY BOARD ASSY, E	
IC101	MSC7112-01SS	IC	
IC102	MSC1146BRS	IC	
IC103	SBX1492-01	INFRARED RAYS UNIT	
Q101	2SK658	FE TRANSISTOR	
Q102	DTA124ES	TRANSISTOR	
Q103	DTA124ES	TRANSISTOR	
D101	SLR-55VC3F	LE DIODE, MARK	
D102	SLR-55VC3F	LE DIODE, ERASE	
D103	MTZ5.1B	ZENER DIODE	
D104	SLR-55VC3F	LE DIODE, STEREO	
D105	SLR-55MC3F	LE DIODE, BILINGUAL	
D107	SLR-55MC3F	LE DIODE, S.CASSETTE	
D109	SLR-34MC3F	LE DIODE, S-VHS	
D110	SLR-34MC3F	LE DIODE, S-VHS	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	D111	SLR-34MC3F	LE DIODE, S-VHS	
	D112	SLR-55MC3F	LE DIODE	
	R101	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R102	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R103	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R104	QRD161J-273	RESISTOR	27KΩ, 1/6W
	R105	QRD161J-221	RESISTOR	220Ω, 1/6W
	R106	QRD161J-221	RESISTOR	220Ω, 1/6W
	R107	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R108	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R109	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R110	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R111	QRD161J-153	RESISTOR	15KΩ, 1/6W
	R112	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R113	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R114	QRD161J-101	RESISTOR	100Ω, 1/6W
	R115	QRD161J-101	RESISTOR	100Ω, 1/6W
	R116	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R117	QRD161J-101	RESISTOR	100Ω, 1/6W
	R118	QRD161J-101	RESISTOR	100Ω, 1/6W
	R119	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R120	QRD161J-471	RESISTOR	470Ω, 1/6W
	R121	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R122	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R123	QRD161J-561	RESISTOR	560Ω, 1/6W
	R124	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R125	PU59375	SLIDE VR., REC LEVEL	
	R126	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R207	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R214	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R402	PU60257	V RESISTOR, PICTURE SHARPNESS	
	C101	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C102	QER61HM-104	E CAPACITOR	0.1μF, 50V
	C103	QER60JM-336	E CAPACITOR	33μF, 6.3V
	C104	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C105	QER61VM-106	E CAPACITOR	10μF, 35V
	C106	QER60JM-226	E CAPACITOR	22μF, 6.3V
	C107	QER60JM-226	E CAPACITOR	22μF, 6.3V
	C108	QER61CM-106	E CAPACITOR	10μF, 16V
	C109	QFJ41HJ-223	M CAPACITOR	0.022μF, 50V
	C110	QFJ41HJ-333	M CAPACITOR	0.033μF, 50V
	C111	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C112	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C113	QER61VM-226	E CAPACITOR	22μF, 35V
	C114	QEK40JM-337	E CAPACITOR	330μF, 6.3V
	C115	QCSB1HJ-330	CAPACITOR	33PF, 50V
	C116	QCSB1HJ-330	CAPACITOR	33PF, 50V
	C117	QCF11EZ-473	CAPACITOR	0.047μF, 25V
	S208	PU57550	TACT SWITCH, TRACKING (—)	
	or	PU53598	TACT SWITCH	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	S216	PU57550	TACT SWITCH, TRACKING (+)
	or	PU53598	TACT SWITCH
	FDP1	PU60660	FLUORESCENT DISPLAY PANEL, E
	FDP1	PU60660-2	FLUORESCENT DISPLAY PANEL, EG
	HD1	PQM30038-1-2	LED HOLDER
	HD2	PQ42602	LED SHADE
	HD3	PQ31309	FDP HOLDER (L)
	HD4	PQ31310	FDP HOLDER (R)
	SLD1	PU56919	RASTER METAL
	CN105	PU59513-9	CAP HOUSING
	CN107	PU59555-7	CAP HOUSING
	CN108	PU59555-4	CAP HOUSING
	CN109	PU59513-2	CAP HOUSING

— STEP BOARD ASSEMBLY⟨37⟩ —

	PWBA2	PB10155A2-04	STEP BOARD ASSY
	CN1	PU59555-12	CAP HOUSING
	CN2	PU59555-4	CAP HOUSING
	CN3	PU60566-116	FPC CONNECTOR

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20. SERVO SUB BOARD ASSEMBLY ⟨39⟩

	PWBA	PB30095A-02	SERVO SUB BOARD ASSEMBLY
	IC1	BU3791	IC
	Q1	DTC144ES	TRANSISTOR
	or	UN4213	TRANSISTOR
	or	2SC3399	TRANSISTOR
	Q2	DTC124ES	TRANSISTOR
	Q3	DTC144WS	TRANSISTOR
	D1	1SS133	DIODE
	or	MA165	DIODE
	R1	QRD161J-103	RESISTOR 10KΩ, 1/6W
	R2	QRD161J-104	RESISTOR 100KΩ, 1/6W
	R3	QRD161J-104	RESISTOR 100KΩ, 1/6W
	R4	QRD161J-104	RESISTOR 100KΩ, 1/6W
	R5	QRD161J-104	RESISTOR 100KΩ, 1/6W
	R6	QRD161J-822	RESISTOR 8.2KΩ, 1/6W
	R7	QRD161J-104	RESISTOR 100KΩ, 1/6W
	R8	QRD161J-103	RESISTOR 10KΩ, 1/6W
	R9	QRD161J-563	RESISTOR 56KΩ, 1/6W
	R10	QRD161J-472	RESISTOR 4.7KΩ, 1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C1	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	C2	QCC11CK-104	CAPACITOR	0.1μF, 16V
	C3	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	C4	QCBB1HJ-121	CAPACITOR	120PF, 50V
	C5	QEK61AM-336	E CAPACITOR	33μF, 10V
	C6	QFN31HJ-103	M CAPACITOR	0.01μF, 50V
	CN1	PU59555-7	CAP HOUSING	
	CN2	PU58844-7	CAP HOUSING	
	CN5	PU58844-2	CAP HOUSING	

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21. PRE/REC BOARD ASSEMBLY ⟨43⟩

PWBA	PB10194A-01	PRE/REC AMP BOARD ASSEMBLY
IC1	TA8609P	IC
IC2	TA8733F	IC
IC3	AN6392	IC
Q1	2SC2412K	TRANSISTOR
Q2	2SC2412K	TRANSISTOR
Q3	2SC2412K	TRANSISTOR
Q4	2SC2412K	TRANSISTOR
Q6	2SC2412K	TRANSISTOR
Q7	2SC2412K	TRANSISTOR
Q8	2SA1037K	TRANSISTOR
Q9	2SA1037K	TRANSISTOR
Q10	DTC144EK	TRANSISTOR
Q11	DTC144EK	TRANSISTOR
Q12	DTC124EK	TRANSISTOR
Q13	2SA1036K(R)	TRANSISTOR
Q14	2SA1036K(R)	TRANSISTOR
Q15	DTC124EK	TRANSISTOR
Q16	DTC144WK	TRANSISTOR
Q101	DTA124EK	TRANSISTOR
Q102	DTA124EK	TRANSISTOR
Q103	DTC144WK	TRANSISTOR
Q104	2SA1037K	TRANSISTOR
Q105	2SC2412K	TRANSISTOR
Q106	2SC2412K	TRANSISTOR
Q107	2SA1037K	TRANSISTOR
Q108	2SC2412K	TRANSISTOR
Q109	2SA1037K	TRANSISTOR
Q110	DTC124EK	TRANSISTOR
Q111	2SC2412K	TRANSISTOR
Q112	2SC2412K	TRANSISTOR
Q113	2SC2412K	TRANSISTOR
Q114	2SC2412K	TRANSISTOR
Q115	2SC2412K	TRANSISTOR
Q116	2SC2412K	TRANSISTOR
Q117	2SC2412K	TRANSISTOR

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	Q118	2SA1037K	TRANSISTOR	
	Q119	2SC2412K	TRANSISTOR	
	D1	DAN202K	DIODE	
	D2	DAN202K	DIODE	
	D3	DAN202K	DIODE	
	D5	DAN202K	DIODE	
	D101	DAN202K	DIODE	
	D102	DAN202K	DIODE	
	D103	DAP202K	DIODE	
	D104	MA157	DIODE	
	D105	MA157	DIODE	
	R1	QRSA08J-100YN	RESISTOR	10Ω, 1/10W
	R2	QRSA08J-272YN	RESISTOR	2.7KΩ, 1/10W
	R3	QRSA08J-100YN	RESISTOR	10Ω, 1/10W
	R4	QRSA08J-272YN	RESISTOR	2.7KΩ, 1/10W
	R5	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R6	QRSA08J-100YN	RESISTOR	10Ω, 1/10W
	R7	QRSA08J-100YN	RESISTOR	10Ω, 1/10W
	R8	QRSA08J-272YN	RESISTOR	2.7KΩ, 1/10W
	R9	QRSA08J-272YN	RESISTOR	2.7KΩ, 1/10W
	R10	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R11	QVZ3531-152	V RESISTOR, SP CH-1 Q	1.5KΩ
	R12	QVZ3531-152	V RESISTOR, LP CH-2 Q	1.5KΩ
	R13	QVZ3531-152	V RESISTOR, LP CH-1 Q	1.5KΩ
	R14	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R15	QVZ3531-152	V RESISTOR, SP CH-2 Q	1.5KΩ
	R19	QRSA08J-122YN	RESISTOR	1.2KΩ, 1/10W
	R20	QRSA08J-221YN	RESISTOR	220Ω, 1/10W
	R21	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R22	QRSA08J-122YN	RESISTOR	1.2KΩ, 1/10W
	R23	QRSA08J-221YN	RESISTOR	220Ω, 1/10W
	R24	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R25	QRSA08J-122YN	RESISTOR	1.2KΩ, 1/10W
	R26	QRSA08J-122YN	RESISTOR	1.2KΩ, 1/10W
	R27	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R28	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R29	QRSA08J-393YN	RESISTOR	39KΩ, 1/10W
	R30	QRSA08J-393YN	RESISTOR	39KΩ, 1/10W
	R31	QRD161J-391	RESISTOR	390Ω, 1/6W
	R32	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
	R33	QRSA08J-391YN	RESISTOR	390Ω, 1/10W
	R34	QRSA08J-623YN	RESISTOR	62KΩ, 1/10W
	R35	QRSA08J-821YN	RESISTOR	820Ω, 1/10W
	R36	QRSA08J-680YN	RESISTOR	68Ω, 1/10W
	R37	QRSA08J-820YN	RESISTOR	82Ω, 1/10W
	R38	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R39	QRSA08J-472YN	RESISTOR	4.7KΩ, 1/10W
	R40	QRSA08J-222YN	RESISTOR	2.2KΩ, 1/10W
	R41	QRSA08J-332YN	RESISTOR	3.3KΩ, 1/10W
	R42	QRSA08J-393YN	RESISTOR	39KΩ, 1/10W
	R43	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R44	QRSA08J-393YN	RESISTOR	39KΩ, 1/10W
	R45	QRSA08J-222YN	RESISTOR	2.2KΩ, 1/10W
	R46	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R47	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
⚠	R48	PU52108-150	POSISTOR	
	R49	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R50	QRSA08J-101YN	RESISTOR	100Ω, 1/10W
	R51	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R52	QRSA08J-823YN	RESISTOR	82KΩ, 1/10W
	R53	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R54	QRSA08J-821YN	RESISTOR	820Ω, 1/10W
	R55	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R56	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R101	QRSA08J-223YN	RESISTOR	22KΩ, 1/10W
	R102	QRSA08J-273YN	RESISTOR	27KΩ, 1/10W
	R103	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R104	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R105	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
	R106	PU57457-152	V RESISTOR, FREQ RES (S-MODE, LP)	
	R107	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R108	PU57457-222	V RESISTOR, FREQ RES (S-MODE, SP)	
	R109	QRSA08J-561YN	RESISTOR	560Ω, 1/10W
	R110	QRSA08J-152YN	RESISTOR	1.5KΩ, 1/10W
	R111	QRSA08J-561YN	RESISTOR	560Ω, 1/10W
	R112	QRSA08J-472YN	RESISTOR	4.7KΩ, 1/10W
	R113	QRSA08J-561YN	RESISTOR	560Ω, 1/10W
	R114	QRSA08J-152YN	RESISTOR	1.5KΩ, 1/10W
	R117	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R118	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R119	QRSA08J-122YN	RESISTOR	1.2KΩ, 1/10W
	R120	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R121	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R122	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
	R123	QRSA08J-561YN	RESISTOR	560Ω, 1/10W
	R124	QRSA08J-122YN	RESISTOR	1.2KΩ, 1/10W
	R125	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R126	QRSA08J-122YN	RESISTOR	1.2KΩ, 1/10W
	R127	QRSA08J-222YN	RESISTOR	2.2KΩ, 1/10W
	R128	QRSA08J-681YN	RESISTOR	680Ω, 1/10W
	R129	QRSA08J-101YN	RESISTOR	100Ω, 1/10W
	R130	PU57457-682	V RESISTOR, FREQ RES (N-MODE, SP)	
	R131	PU57457-332	V RESISTOR, FREQ RES (N-MODE, LP)	
	R134	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R135	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R136	QRSA08J-223YN	RESISTOR	22KΩ, 1/10W
	R137	QRSA08J-471YN	RESISTOR	470Ω, 1/10W
	R138	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R139	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R140	QRSA08J-392YN	RESISTOR	3.9KΩ, 1/10W
	R141	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R142	QRSA08J-682YN	RESISTOR	6.8KΩ, 1/10W
	R143	QRSA08J-361YN	RESISTOR	360Ω, 1/10W
	R144	QRSA08J-561YN	RESISTOR	560Ω, 1/10W
	R145	QRSA08J-152YN	RESISTOR	1.5KΩ, 1/10W
	R146	QRSA08J-332YN	RESISTOR	3.3KΩ, 1/10W
	R147	QRSA08J-472YN	RESISTOR	4.7KΩ, 1/10W
	R148	QRSA08J-184YN	RESISTOR	180KΩ, 1/10W
	R149	QRSA08J-682YN	RESISTOR	6.8KΩ, 1/10W
	R150	QRSA08J-184YN	RESISTOR	180KΩ, 1/10W
	R151	QRSA08J-223YN	RESISTOR	22KΩ, 1/10W
	R152	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R154	QRSA08J-821YN	RESISTOR	820Ω, 1/10W
	C1	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C2	PU60733-200	TRIMMER CAPACITOR, LP CH-2 FO	20PF
	C3	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C4	PU60733-200	TRIMMER CAPACITOR, LP CH-1 FO	20PF
	C5	PU60733-200	TRIMMER CAPACITOR, SP CH-2 FO	20PF
	C6	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C7	PU60733-100	TRIMMER CAPACITOR, SP CH-1 FO	10PF
	C8	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C9	QER51HM-105	E CAPACITOR	1μF, 50V
	C10	QER51HM-105	E CAPACITOR	1μF, 50V
	C11	QER51HM-105	E CAPACITOR	1μF, 50V
	C12	QER51HM-105	E CAPACITOR	1μF, 50V
	C13	QER50JM-476	E CAPACITOR	47μF, 6.3V
	C14	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C15	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C16	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C17	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C18	QCSA1HJ-560	CAPACITOR	56PF, 50V
	C19	QCSA1HJ-151	CAPACITOR	150PF, 50V
	C20	QCSA1HJ-271	CAPACITOR	270PF, 50V
	C21	QER50JM-476	E CAPACITOR	47μF, 6.3V
	C22	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C23	QCSA1HJ-331	CAPACITOR	330PF, 50V
	C24	QCSA1HJ-121	CAPACITOR	120PF, 50V
	C25	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C26	QER51HM-104	E CAPACITOR	0.1μF, 50V
	C27	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C28	QER51HM-105	E CAPACITOR	1μF, 50V
	C29	QER51HM-105	E CAPACITOR	1μF, 50V
	C30	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C31	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C32	QER51CM-476	E CAPACITOR	47μF, 16V
	C33	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C34	QFN41HJ-273	M CAPACITOR	0.027μF, 50V
	C35	QFN31HJ-103	M CAPACITOR	0.01μF, 50V
	C36	QER51HM-105	E CAPACITOR	1μF, 50V
	C37	QCSA1HJ-470	CAPACITOR	47PF, 50V
	C38	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C39	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C40	QCSA1HJ-7R0	CAPACITOR	7PF, 50V
	C41	QER50JM-476	E CAPACITOR	47μF, 6.3V
	C42	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C43	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C44	QCSA1HJ-121	CAPACITOR	120PF, 50V
	C45	QCSA1HJ-101	CAPACITOR	100PF, 50V
	C46	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C47	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C48	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C49	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C50	QCVB1CN-103	CAPACITOR	0.01μF, 16V
	C51	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C52	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C53	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C102	QCSA1HJ-180	CAPACITOR	18PF, 50V
	C103	QCFA1HZ-103	CAPACITOR	0.01μF, 50V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C104	QCSA1HJ-390	CAPACITOR	39PF, 50V
	C106	QCSA1HJ-180	CAPACITOR	18PF, 50V
	C107	QCSA1HJ-390	CAPACITOR	39PF, 50V
	C108	QCSA1HJ-120	CAPACITOR	12PF, 50V
	C109	QCSA1HJ-100	CAPACITOR	10PF, 50V
	C110	QER50JM-476	E CAPACITOR	47μF, 6.3V
	C111	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C112	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C113	QCSA1HJ-360	CAPACITOR	36PF, 50V
	C114	QCSA1HJ-220	CAPACITOR	22PF, 50V
	C115	QCSA1HJ-180	CAPACITOR	18PF, 50V
	C117	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C118	QCSA1HJ-470	CAPACITOR	47PF, 50V
	C120	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C121	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C122	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C123	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C124	QCSA1HJ-681	CAPACITOR	680PF, 50V
	C125	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C126	QER51HM-105	E CAPACITOR	1μF, 50V
	C127	QER51EM-475	E CAPACITOR	4.7μF, 25V
	C128	QCFA1HZ-103	CAPACITOR	0.01μF, 50V
	C129	QER50JM-476	E CAPACITOR	47μF, 6.3V
	C130	QCFA1EZ-104	CAPACITOR	0.1μF, 25V
	C131	QCSA1HJ-221	CAPACITOR	220PF, 50V
	C132	QCSA1HJ-120	CAPACITOR	12PF, 50V
	C133	QCSA1HJ-7R0	CAPACITOR	7PF, 50V
	C134	QCSA1HJ-680	CAPACITOR	68PF, 50V
	C138	QCSB1HJ-100	CAPACITOR	10PF, 50V
	L1	PU48530-101K	PEAKING COIL	100μH
	L2	PU59152-181J	PEAKING COIL	180μH
	L3	PU48530-101K	PEAKING COIL	100μH
	L4	PU59152-820J	PEAKING COIL	82μH
	L5	PU59152-101J	PEAKING COIL	100μH
	L6	PU48530-101K	PEAKING COIL	100μH
	L7	PU59152-4R7K	PEAKING COIL	4.7μH
	L8	PU59152-270J	PEAKING COIL	27μH
	L9	PU59152-330J	PEAKING COIL	33μH
	L10	PU59152-330J	PEAKING COIL	33μH
	L11	PU59152-2R2K	PEAKING COIL	2.2μH
	L12	PU59152-100J	PEAKING COIL	10μH
	L13	PU59152-150J	PEAKING COIL	15μH
	L101	PU59152-560J	PEAKING COIL	56μH
	L102	PU59152-150J	PEAKING COIL	15μH
	L103	PU59152-390J	PEAKING COIL	39μH
	L104	PU59152-221J	PEAKING COIL	220μH
	L105	PU59152-100J	PEAKING COIL	10μH
	L106	PU48530-101K	PEAKING COIL	100μH
	L107	PU59152-820J	PEAKING COIL	82μH
	L108	PU59152-330J	COIL	33μH
	L109	PU59152-820J	PEAKING COIL	82μH
	L110	PU59152-220J	PEAKING COIL	22μH
	L111	PU59152-220J	PEAKING COIL	22μH
	L113	PU48530-101K	PEAKING COIL	100μH
	L114	PU59152-8R2J	PEAKING COIL	8.2μH
	L115	PU59152-121J	PEAKING COIL	120μH

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	BKT1	PQ42955	BOARD BRACKET
	ETH1	PQ40433-2	EARTH LUG
	SCW1	DPSP2606Z	SCREW, X2, FOR BOARD
	SCW2	DPSP2606Z	SCREW, FOR BRACKET
	SLD1	PU36485	SHIELD PLATE
	SLD2	PU36486	SHIELD CASE
	SPC1	WBS2600Z	T.L. WASHER
	SPC2	PU59210-001	W. LOKING SPACER, X5
	TP1	PU56008	TEST PIN, X8 (1, 3-7, GND1, GND2)
	CN1	PU56258-10	CAP HOUSING
	CN2	PU58844-5	CAP HOUSING
	CN3	PU58844-3R	CAP HOUSING
	CN4	PU58844-2	CAP HOUSING
	CN5	PU58844-4	CAP HOUSING
	CN6	PU58844-5	CAP HOUSING
	CN7	PU58844-3	CAP HOUSING

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22. FLYING ERASE BOARD ASSEMBLY ⟨46⟩

PWBA	PB30092A	FLYING ERASE BOARD ASSY	
Q1	2SA933S	TRANSISTOR	
Q2	2SC1741S(QR)	TRANSISTOR	
Q3	2SA933S(Q)	TRANSISTOR	
Q4	2SD639R	TRANSISTOR	
Q5	2SD639R	TRANSISTOR	
D1	UZ8.2BSC	ZENER DIODE	
D2	1SS133	DIODE	
R1	QRD161J-473	RESISTOR	47KΩ, 1/6W
R2	QRD161J-472	RESISTOR	4.7KΩ, 1/6W
R3	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
R4	QRD161J-473	RESISTOR	47KΩ, 1/6W
R5	QRD161J-183	RESISTOR	18KΩ, 1/6W
R6	QRD161J-104	RESISTOR	100KΩ, 1/6W
R7	QRD161J-121	RESISTOR	120Ω, 1/6W
R8	QRD161J-104	RESISTOR	100KΩ, 1/6W
R9	QRD161J-121	RESISTOR	120Ω, 1/6W
C1	QCVB1CN-103	CAPACITOR	0.01μF, 16V
C2	QCC31EJ-123	CAPACITOR	0.012μF, 25V
C3	QCSB1HJ-560	CAPACITOR	56PF, 50V
C4	QCBB1HJ-820	CAPACITOR	82PF, 50V
C5	QCVB1CN-103	CAPACITOR	0.01μF, 16V
C6	QCBB1HJ-820	CAPACITOR	82PF, 50V
C8	QCT25UJ-181	CAPACITOR	180PF
C9	QCT05UJ-330	CAPACITOR	33PF

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	L1	PU48530-560J	PEAKING COIL	56μH
	L2	PU48530-3R3K	PEAKING COIL	3.3μH
	L3	PU48530-3R3K	PEAKING COIL	3.3μH
	L4	PU59152-101J	PEAKING COIL	100μH
	T1	PU56175	S. TRANS	
	SLD1	PU60779	SHIELD CASE	
	SLD2	PU60781	SHIELD COVER	
	SLD3	PU60780	SHIELD PLATE	
	CN1	PU58844-3	CAP HOUSING	
	CN2	PU58844-2R	CAP HOUSING	
	CN3	PU58844-2	CAP HOUSING	

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23. SERVO BOARD ASSEMBLY ⟨48⟩

	PWBA	PB10152A-01	SERVO BOARD ASSY
	IC1	HD49722NT	IC
	IC2	BU2767S	IC
	Q1	DTC124ES	TRANSISTOR
		or UN4212	TRANSISTOR
		or 2SC3400	TRANSISTOR
	Q2	DTA124ES	TRANSISTOR
		or 2SA1346	TRANSISTOR
		or UN4112	TRANSISTOR
	Q3	DTA124ES	TRANSISTOR
		or UN4112	TRANSISTOR
		or 2SA1346	TRANSISTOR
	Q4	DTA124ES	TRANSISTOR
		or UN4112	TRANSISTOR
		or 2SA1346	TRANSISTOR
	Q5	DTA124ES	TRANSISTOR
		or UN4112	TRANSISTOR
		or 2SA1346	TRANSISTOR
	Q6	DTC144ES	TRANSISTOR
		or 2SC3399	TRANSISTOR
		or UN4213	TRANSISTOR
	Q7	DTA124ES	TRANSISTOR
		or 2SA1346	TRANSISTOR
		or UN4112	TRANSISTOR
	D1	1SS133	DIODE
		or MA165	DIODE
	D2	1SS133	DIODE
		or MA165	DIODE
	D3	1SS133	DIODE
		or MA165	DIODE
	D4	1SS133	DIODE
		or MA165	DIODE
	D5	1SS133	DIODE
		or MA165	DIODE

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	D6	1SS133	DIODE	
		or MA165	DIODE	
	D7	1SS133	DIODE	
		or MA165	DIODE	
	D8	1SS133	DIODE	
		or MA165	DIODE	
	D9	1SS133	DIODE	
	D10	1SS133	DIODE	
	D11	1SS133	DIODE	
		or MA165	DIODE	
	D12	1SS133	DIODE	
		or MA165	DIODE	
	D13	1SS133	DIODE	
		or MA165	DIODE	
	D14	1SS133	DIODE	
		or MA165	DIODE	
	D15	1SS133	DIODE	
		or MA165	DIODE	
	D16	1SS133	DIODE	
		or MA165	DIODE	
	D17	1SS133	DIODE	
		or MA165	DIODE	
	D18	1SS133	DIODE	
		or MA165	DIODE	
	D20	1SS133	DIODE	
		or MA165	DIODE	
	R1	QRSA08J-682YN	RESISTOR	6.8KΩ, 1/10W
	R2	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R3	QRSA08J-155YN	RESISTOR	1.5MΩ, 1/10W
	R4	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R5	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R6	QRSA08J-105YN	RESISTOR	1MΩ, 1/10W
	R7	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R8	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R9	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R10	QRSA08J-222YN	RESISTOR	2.2KΩ, 1/10W
	R11	QRSA08J-273YN	RESISTOR	27KΩ, 1/10W
	R12	QRSA08J-475YN	RESISTOR	4.7MΩ, 1/10W
	R13	QRSA08J-333YN	RESISTOR	33KΩ, 1/10W
	R14	QRSA08J-392YN	RESISTOR	3.9KΩ, 1/10W
	R15	QRSA08J-153YN	RESISTOR	15KΩ, 1/10W
	R16	QRSA08J-182YN	RESISTOR	1.8KΩ, 1/10W
	R17	QRSA08J-105YN	RESISTOR	1MΩ, 1/10W
	R18	QRSA08J-273YN	RESISTOR	27KΩ, 1/10W
	R19	QRSA08K-395YN	RESISTOR	3.9MΩ, 1/10W
	R20	QRSA08J-105YN	RESISTOR	1MΩ, 1/10W
	R21	QRSA08J-273YN	RESISTOR	27KΩ, 1/10W
	R22	QRSA08J-274YN	RESISTOR	270KΩ, 1/10W
	R23	QRSA08J-393YN	RESISTOR	39KΩ, 1/10W
	R24	QRSA08J-475YN	RESISTOR	4.7MΩ, 1/10W
	R25	QRSA08J-334YN	RESISTOR	330KΩ, 1/10W
	R26	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R27	QRSA08J-154YN	RESISTOR	150KΩ, 1/10W
	R28	QRSA08J-154YN	RESISTOR	150KΩ, 1/10W
	R30	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R31	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R32	QVZ3521-684	V RESISTOR, SW POINT	680KΩ
	R33	QRD161J-104	RESISTOR	100KΩ, 1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R34	QRSA08J-222YN	RESISTOR	2.2KΩ, 1/10W
	R35	QRSA08J-823YN	RESISTOR	82KΩ, 1/10W
	R36	QVZ3521-474	V RESISTOR, LP X2 NOR TK	470KΩ
	R37	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R38	QVZ3521-474	V RESISTOR, SP X2 NOR TK	470KΩ
	R39	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R40	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R41	QRD161J-334	RESISTOR	330KΩ, 1/6W
	R42	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R43	QRSA08J-123YN	RESISTOR	12KΩ, 1/10W
	R44	QRSA08J-822YN	RESISTOR	8.2KΩ, 1/10W
	R45	QRSA08J-223YN	RESISTOR	22KΩ, 1/10W
	R47	QRSA08J-123YN	RESISTOR	12KΩ, 1/10W
	R48	QRSA08J-392YN	RESISTOR	3.9KΩ, 1/10W
	R49	QRSA08J-123YN	RESISTOR	12KΩ, 1/10W
	R51	QRSA08J-822YN	RESISTOR	8.2KΩ, 1/10W
	R52	QRSA08J-104YN	RESISTOR	100KΩ, 1/10W
	R53	QRSA08J-684YN	RESISTOR	680KΩ, 1/10W
	R55	QVZ3521-224	V RESISTOR, SP SLOW TK PRE-SET	220KΩ
	R56	QRD161J-473	RESISTOR	47KΩ, 1/6W
	R57	QRSA08J-154YN	RESISTOR	150KΩ, 1/10W
	R58	QRSA08J-274YN	RESISTOR	270KΩ, 1/10W
	R59	QVZ3521-104	V RESISTOR, LP SLOW TK PRE-SET	100KΩ
	R61	QRSA08J-684YN	RESISTOR	680KΩ, 1/10W
	R63	QRSA08J-104YN	RESISTOR	100KΩ, 1/10W
	C1	QCC11CK-102	CAPACITOR	0.001μF, 16V
	C2	QEK61AM-226	E CAPACITOR	22μF, 10V
	C3	QEK61AM-226	E CAPACITOR	22μF, 10V
	C4	QCSB1HJ-150	CAPACITOR	15PF, 50V
	C5	QCC11CK-473	CAPACITOR	0.047μF, 16V
	C6	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	C7	QEK61HM-105	E CAPACITOR	1μF, 50V
	C8	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	C9	QCC11CK-153	CAPACITOR	0.015μF, 16V
	C10	QCBC1HJ-561	CAPACITOR	560PF, 50V
	C11	QCC11CK-102	CAPACITOR	0.001μF, 16V
	C12	QEK61HM-105	E CAPACITOR	1μF, 50V
	C13	QEK61AM-226	E CAPACITOR	22μF, 10V
	C14	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C15	QCC11CK-102	CAPACITOR	0.001μF, 16V
	C16	QFV71HJ-274	M CAPACITOR	0.27μF, 50V
	C17	QFV71HJ-564	M CAPACITOR	0.56μF, 50V
	C18	QFV71HJ-153	M CAPACITOR	0.015μF, 50V
	C19	QEK61EM-475	E CAPACITOR	4.7μF, 25V
	C20	QEK61EM-475	E CAPACITOR	4.7μF, 25V
	C21	QEK61CM-106	E CAPACITOR	10μF, 16V
	C22	QEK61CM-106	E CAPACITOR	10μF, 16V
	C23	QFV71HJ-334	M CAPACITOR	0.33μF, 50V
	C24	QFV71HJ-333	M CAPACITOR	0.033μF, 50V
	C25	QCBB1HJ-471	CAPACITOR	470PF, 50V
	C26	QFL31HJ-682	M CAPACITOR	0.0068μF, 50V
	C27	QFL31HJ-102	M CAPACITOR	0.001μF, 50V
	C28	QFV71HJ-124	M CAPACITOR	0.12μF, 50V
	C29	QCF31HP-223	CAPACITOR	0.022μF, 50V
	C30	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C31	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C32	QCC11CK-102	CAPACITOR	0.001μF, 16V
	C33	QFV71HJ-224	M CAPACITOR	0.22μF, 50V
	C34	QEK61AM-226	E CAPACITOR	22μF, 10V
	C35	QFV71HJ-393	M CAPACITOR	0.039μF, 50V
	C36	QFV71HJ-274	M CAPACITOR	0.27μF, 50V
	C37	QFV71HJ-124	M CAPACITOR	0.12μF, 50V
	C38	QFV71HJ-393	M CAPACITOR	0.039μF, 50V
	C39	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	C40	QCBB1HJ-561	CAPACITOR	560PF, 50V
	C41	QFV71HJ-474	M CAPACITOR	0.47μF, 50V
	C42	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	TH1	NTH5D223KA	THERMISTOR	
		or NTH5D223LA	THERMISTOR	
	TP1	PU45908-3	TEST PIN, X2, (1, GND)	
	CN1	PU58844-4	CAP HOUSING	
	CN4	PU58931-14	CAP HOUSING	
	CN5	PU58931-12	CAP HOUSING	
	CN6	PU58844-8	CAP HOUSING	

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#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	L1	PU48530-560J	PEAKING COIL	56μH
	L2	PU48530-3R3K	PEAKING COIL	3.3μH
	L3	PU48530-3R3K	PEAKING COIL	3.3μH
	L4	PU59152-101J	PEAKING COIL	100μH
	T1	PU56175	S. TRANS	
	SLD1	PU60779	SHIELD CASE	
	SLD2	PU60781	SHIELD COVER	
	SLD3	PU60780	SHIELD PLATE	
	CN1	PU58844-3	CAP HOUSING	
	CN2	PU58844-2R	CAP HOUSING	
	CN3	PU58844-2	CAP HOUSING	

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23. SERVO BOARD ASSEMBLY ⟨48⟩

PWBA	PB10152A-01	SERVO BOARD ASSY	
IC1	HD49722NT	IC	
IC2	BU2767S	IC	
Q1	DTC124ES	TRANSISTOR	
or	UN4212	TRANSISTOR	
or	2SC3400	TRANSISTOR	
Q2	DTA124ES	TRANSISTOR	
or	2SA1346	TRANSISTOR	
or	UN4112	TRANSISTOR	
Q3	DTA124ES	TRANSISTOR	
or	UN4112	TRANSISTOR	
or	2SA1346	TRANSISTOR	
Q4	DTA124ES	TRANSISTOR	
or	UN4112	TRANSISTOR	
or	2SA1346	TRANSISTOR	
Q5	DTA124ES	TRANSISTOR	
or	UN4112	TRANSISTOR	
or	2SA1346	TRANSISTOR	
Q6	DTC144ES	TRANSISTOR	
or	2SC3399	TRANSISTOR	
or	UN4213	TRANSISTOR	
Q7	DTA124ES	TRANSISTOR	
or	2SA1346	TRANSISTOR	
or	UN4112	TRANSISTOR	
D1	1SS133	DIODE	
or	MA165	DIODE	
D2	1SS133	DIODE	
or	MA165	DIODE	
D3	1SS133	DIODE	
or	MA165	DIODE	
D4	1SS133	DIODE	
or	MA165	DIODE	
D5	1SS133	DIODE	
or	MA165	DIODE	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	D6	1SS133	DIODE	
	or	MA165	DIODE	
	D7	1SS133	DIODE	
	or	MA165	DIODE	
	D8	1SS133	DIODE	
	or	MA165	DIODE	
	D9	1SS133	DIODE	
	D10	1SS133	DIODE	
	D11	1SS133	DIODE	
	or	MA165	DIODE	
	D12	1SS133	DIODE	
	or	MA165	DIODE	
	D13	1SS133	DIODE	
	or	MA165	DIODE	
	D14	1SS133	DIODE	
	or	MA165	DIODE	
	D15	1SS133	DIODE	
	or	MA165	DIODE	
	D16	1SS133	DIODE	
	or	MA165	DIODE	
	D17	1SS133	DIODE	
	or	MA165	DIODE	
	D18	1SS133	DIODE	
	or	MA165	DIODE	
	D20	1SS133	DIODE	
	or	MA165	DIODE	
	R1	QRSA08J-682YN	RESISTOR	6.8KΩ, 1/10W
	R2	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R3	QRSA08J-155YN	RESISTOR	1.5MΩ, 1/10W
	R4	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R5	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R6	QRSA08J-105YN	RESISTOR	1MΩ, 1/10W
	R7	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R8	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R9	QRSA08J-102YN	RESISTOR	1KΩ, 1/10W
	R10	QRSA08J-222YN	RESISTOR	2.2KΩ, 1/10W
	R11	QRSA08J-273YN	RESISTOR	27KΩ, 1/10W
	R12	QRSA08J-475YN	RESISTOR	4.7MΩ, 1/10W
	R13	QRSA08J-333YN	RESISTOR	33KΩ, 1/10W
	R14	QRSA08J-392YN	RESISTOR	3.9KΩ, 1/10W
	R15	QRSA08J-153YN	RESISTOR	15KΩ, 1/10W
	R16	QRSA08J-182YN	RESISTOR	1.8KΩ, 1/10W
	R17	QRSA08J-105YN	RESISTOR	1MΩ, 1/10W
	R18	QRSA08J-273YN	RESISTOR	27KΩ, 1/10W
	R19	QRSA08K-395YN	RESISTOR	3.9MΩ, 1/10W
	R20	QRSA08J-105YN	RESISTOR	1MΩ, 1/10W
	R21	QRSA08J-273YN	RESISTOR	27KΩ, 1/10W
	R22	QRSA08J-274YN	RESISTOR	270KΩ, 1/10W
	R23	QRSA08J-393YN	RESISTOR	39KΩ, 1/10W
	R24	QRSA08J-475YN	RESISTOR	4.7MΩ, 1/10W
	R25	QRSA08J-334YN	RESISTOR	330KΩ, 1/10W
	R26	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R27	QRSA08J-154YN	RESISTOR	150KΩ, 1/10W
	R28	QRSA08J-154YN	RESISTOR	150KΩ, 1/10W
	R30	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R31	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R32	QVZ3521-684	V RESISTOR, SW POINT	680KΩ
	R33	QRD161J-104	RESISTOR	100KΩ, 1/6W

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R34	QRSA08J-222YN	RESISTOR	2.2KΩ, 1/10W
	R35	QRSA08J-823YN	RESISTOR	82KΩ, 1/10W
	R36	QVZ3521-474	V RESISTOR, LP X2 NOR TK	470KΩ
	R37	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R38	QVZ3521-474	V RESISTOR, SP X2 NOR TK	470KΩ
	R39	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R40	QRD161J-223	RESISTOR	22KΩ, 1/6W
	R41	QRD161J-334	RESISTOR	330KΩ, 1/6W
	R42	QRSA08J-103YN	RESISTOR	10KΩ, 1/10W
	R43	QRSA08J-123YN	RESISTOR	12KΩ, 1/10W
	R44	QRSA08J-822YN	RESISTOR	8.2KΩ, 1/10W
	R45	QRSA08J-223YN	RESISTOR	22KΩ, 1/10W
	R47	QRSA08J-123YN	RESISTOR	12KΩ, 1/10W
	R48	QRSA08J-392YN	RESISTOR	3.9KΩ, 1/10W
	R49	QRSA08J-123YN	RESISTOR	12KΩ, 1/10W
	R51	QRSA08J-822YN	RESISTOR	8.2KΩ, 1/10W
	R52	QRSA08J-104YN	RESISTOR	100KΩ, 1/10W
	R53	QRSA08J-684YN	RESISTOR	680KΩ, 1/10W
	R55	QVZ3521-224	V RESISTOR, SP SLOW TK PRE-SET	220KΩ
	R56	QRD161J-473	RESISTOR	47KΩ, 1/6W
	R57	QRSA08J-154YN	RESISTOR	150KΩ, 1/10W
	R58	QRSA08J-274YN	RESISTOR	270KΩ, 1/10W
	R59	QVZ3521-104	V RESISTOR, LP SLOW TK PRE-SET	100KΩ
	R61	QRSA08J-684YN	RESISTOR	680KΩ, 1/10W
	R63	QRSA08J-104YN	RESISTOR	100KΩ, 1/10W
	C1	QCC11CK-102	CAPACITOR	0.001μF, 16V
	C2	QEK61AM-226	E CAPACITOR	22μF, 10V
	C3	QEK61AM-226	E CAPACITOR	22μF, 10V
	C4	QCSB1HJ-150	CAPACITOR	15PF, 50V
	C5	QCC11CK-473	CAPACITOR	0.047μF, 16V
	C6	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	C7	QEK61HM-105	E CAPACITOR	1μF, 50V
	C8	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	C9	QCC11CK-153	CAPACITOR	0.015μF, 16V
	C10	QCBC1HJ-561	CAPACITOR	560PF, 50V
	C11	QCC11CK-102	CAPACITOR	0.001μF, 16V
	C12	QEK61HM-105	E CAPACITOR	1μF, 50V
	C13	QEK61AM-226	E CAPACITOR	22μF, 10V
	C14	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C15	QCC11CK-102	CAPACITOR	0.001μF, 16V
	C16	QFV71HJ-274	M CAPACITOR	0.27μF, 50V
	C17	QFV71HJ-564	M CAPACITOR	0.56μF, 50V
	C18	QFV71HJ-153	M CAPACITOR	0.015μF, 50V
	C19	QEK61EM-475	E CAPACITOR	4.7μF, 25V
	C20	QEK61EM-475	E CAPACITOR	4.7μF, 25V
	C21	QEK61CM-106	E CAPACITOR	10μF, 16V
	C22	QEK61CM-106	E CAPACITOR	10μF, 16V
	C23	QFV71HJ-334	M CAPACITOR	0.33μF, 50V
	C24	QFV71HJ-333	M CAPACITOR	0.033μF, 50V
	C25	QCBB1HJ-471	CAPACITOR	470PF, 50V
	C26	QFL31HJ-682	M CAPACITOR	0.0068μF, 50V
	C27	QFL31HJ-102	M CAPACITOR	0.001μF, 50V
	C28	QFV71HJ-124	M CAPACITOR	0.12μF, 50V
	C29	QCF31HP-223	CAPACITOR	0.022μF, 50V
	C30	QCBB1HJ-101	CAPACITOR	100PF, 50V
	C31	QCBB1HJ-101	CAPACITOR	100PF, 50V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C32	QCC11CK-102	CAPACITOR	0.001μF, 16V
	C33	QFV71HJ-224	M CAPACITOR	0.22μF, 50V
	C34	QEK61AM-226	E CAPACITOR	22μF, 10V
	C35	QFV71HJ-393	M CAPACITOR	0.039μF, 50V
	C36	QFV71HJ-274	M CAPACITOR	0.27μF, 50V
	C37	QFV71HJ-124	M CAPACITOR	0.12μF, 50V
	C38	QFV71HJ-393	M CAPACITOR	0.039μF, 50V
	C39	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	C40	QCBB1HJ-561	CAPACITOR	560PF, 50V
	C41	QFV71HJ-474	M CAPACITOR	0.47μF, 50V
	C42	QCBB1HJ-102	CAPACITOR	0.001μF, 50V
	TH1	NTH5D223KA	THERMISTOR	
		or NTH5D223LA	THERMISTOR	
	TP1	PU45908-3	TEST PIN, X2, (1, GND)	
	CN1	PU58844-4	CAP HOUSING	
	CN4	PU58931-14	CAP HOUSING	
	CN5	PU58931-12	CAP HOUSING	
	CN6	PU58844-8	CAP HOUSING	

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24. DECK TERMINAL BOARD ASSEMBLY ⟨51⟩⟨53⟩

PWBA	PB20013D-02	DECK TERMINAL BOARD ASSY

— DECK TERMINAL BOARD ASSEMBLY ⟨51⟩ —

PWBA1	PB20013C1	DECK TERMINAL BOARD ASSY	
R1	QRD181J-151	RESISTOR	150Ω, 1/8W
R3	QRD181J-331	RESISTOR	330Ω, 1/8W
PHS1	PU60271	PHOTO INTERRUPTER	
WR1	PW30110-26DD885	PARALLEL WIRE, NOT INCLUDED	
CN1	PU59933-17	WIRE TRAP	

— REC SAFETY BOARD ASSEMBLY ⟨53⟩ —

PWBA3	PB20013A3	REC SAFETY BOARD ASSY
S1	PU58644-1-3	REC SAFETY SWITCH

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	

25. RELAY BOARD ASSEMBLY ⟨52⟩

PWBA2	PB20013C2-02	RELAY BOARD ASSY	
C1	QCC11EJ-104	CAPACITOR	0.1μF, 25V
LC1	PU59736-471	N FILTER	
LC2	PU59736-471	N FILTER	
K1	PU60281-5	FERRITE BEADS	
WR1	PW30113-G0ABZ62	PARALLEL WIRE	
or	PW30118-G0ABZ62	PARALLEL WIRE	

26. END SENSOR BOARD ASSEMBLY ⟨54⟩

PWBA	PB20013A4	END SENSOR BOARD ASSY
Q1	PN268R-NC	PHOTO TRANSISTOR
HD1	PQ31047-1-4	E.S. HOLDER
WR1	PU58898	WIRE
CN1	PU59945-102	WIRE SOCKET

27. CASSETTE HOUSING BOARD ⟨56⟩

PWB1	PB30043	CASSETTE HOUSING BOARD	
or	PB30097	CASSETTE HOUSING BOARD	
Q1	PN268R-NC	PHOTO TRANSISTOR, START SENS	
R1	QRD162J-471	RESISTOR	470Ω, 1/6W
PHS1	PU58879	PHOTO INTERRUPTER, CASS. SENS	
CN1	PU58844-106	CAP HOUSING	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION

28. UPPER DRUM BOARD ⟨62⟩

PWB1	PDM3161	BOARD (UPPER DRUM), X2

29. AUTO TRACKING BOARD ASSEMBLY ⟨83⟩

PWBA	PB20399A	AUTO TRACKING BOARD ASSY
IC1	BU4066B	IC
or	MC14066BCP	IC
IC2	LM324N	IC
or	BA10324	IC
Q1	2SC1740S(RS)	TRANSISTOR
or	2SC3199(G)-TJK	TRANSISTOR
or	2SC3311A(RS)	TRANSISTOR
or	2SC536SPA(FG)	TRANSISTOR
Q2	2SC1740S(RS)	TRANSISTOR
or	2SC3311A(RS)	TRANSISTOR
or	2SC536SPA(FG)	TRANSISTOR
or	2SC3199(G)-TJK	TRANSISTOR
Q3	2SC1740S(RS)	TRANSISTOR
or	2SC3199(G)-TJK	TRANSISTOR
or	2SC536SPA(FG)	TRANSISTOR
or	2SC3311A(RS)	TRANSISTOR
Q4	DTA124ES	TRANSISTOR
Q5	2SA1267(G)-TJK	TRANSISTOR
or	2SA933S(RS)	TRANSISTOR
or	2SA1309(RS)	TRANSISTOR
Q6	2SC1740S(RS)	TRANSISTOR
or	2SC3199(G)-TJK	TRANSISTOR
or	2SC3311A(RS)	TRANSISTOR
or	2SC536SPA(FG)	TRANSISTOR
Q7	DTC144WS	TRANSISTOR
Q9	2SC1740S(RS)	TRANSISTOR
or	2SC3311A(RS)	TRANSISTOR
or	2SC536SPA(FG)	TRANSISTOR
or	2SC3199(G)-TJK	TRANSISTOR
Q10	2SC1740S(RS)	TRANSISTOR
or	2SC536SPA(FG)	TRANSISTOR
or	2SC3199(G)-TJK	TRANSISTOR
or	2SC3311A(RS)	TRANSISTOR
D1	OA90	DIODE
D2	OA90	DIODE
D3	RD9.1ES-T1B3	ZENER DIODE
or	UZ9.1BSC	ZENER DIODE
D4	1SS133	DIODE
or	MA165	DIODE
D5	1SS133	DIODE
or	MA165	DIODE

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	D6	1SS133	DIODE	
	or	MA165	DIODE	
	R1	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R2	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R3	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R4	QRD161J-102	RESISTOR	1KΩ, 1/6W
	R5	QRD161J-683	RESISTOR	68KΩ, 1/6W
	R6	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R7	QRD161J-222	RESISTOR	2.2KΩ, 1/6W
	R8	QRD161J-221	RESISTOR	220Ω, 1/6W
	R9	QRD161J-104	RESISTOR	100KΩ, 1/6W
	R10	QRD161J-332	RESISTOR	3.3KΩ, 1/6W
	R11	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R12	QRD161J-105	RESISTOR	1MΩ, 1/6W
	R13	QRD161J-105	RESISTOR	1MΩ, 1/6W
	R14	QRD161J-105	RESISTOR	1MΩ, 1/6W
	R15	QRD161J-105	RESISTOR	1MΩ, 1/6W
	R18	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R19	QRD161J-394	RESISTOR	390KΩ, 1/6W
	R20	QRD161J-824	RESISTOR	820KΩ, 1/6W
	R23	QRD161J-822	RESISTOR	8.2KΩ, 1/6W
	R24	QRD161J-123	RESISTOR	12KΩ, 1/6W
	R25	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R28	QRD161J-103	RESISTOR	10KΩ, 1/6W
	R29	QRD161J-333	RESISTOR	33KΩ, 1/6W
	R30	QRD161J-153	RESISTOR	15KΩ, 1/6W
	R31	QRD161J-152	RESISTOR	1.5KΩ, 1/6W
	R32	QRD161J-821	RESISTOR	820Ω, 1/6W
	R33	QRD161J-272	RESISTOR	2.7KΩ, 1/6W
	R34	QRD161J-102	RESISTOR	1KΩ, 1/6W
	C1	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C2	QCBB1HJ-271	CAPACITOR	270PF, 50V
	C4	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C5	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C7	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C8	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C9	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C10	QEK61CM-106	E CAPACITOR	10μF, 16V
	C11	QEK61CM-106	E CAPACITOR	10μF, 16V
	C12	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C13	QFV71HJ-473	TF CAPACITOR	0.047μF, 50V
	C14	QCVB1CM-103	CAPACITOR	0.01μF, 16V
	C15	QCBB1HJ-331	CAPACITOR	330PF, 50V
	C16	QCBB1HJ-821	CAPACITOR	820PF, 50V
	L2	PU59152-270J	COIL	27μH
	SPC1	PU59210-001	W. LOKING SPACER	
	TP	PU45908-3	TEST PIN, X2	
	CN1	PU58844-102	CAP HOUSING	
	CN2	PU58844-102R	CAP HOUSING	
	CN3	PU59555-106	CAP HOUSING	

SECTION 6
TECHNICAL INFORMATIONS

6.1 MECHANISM CONTROL CPU PIN FUNCTIONS

6.1.1 IC1 pin function

Pin No.	Symbol	I/O format	Label	IN/OUT	Contents
1	Vcc	–	5 V	IN	for the System Control
2	V_{REF}	–	5 V	IN	for D-A/A-D converter
3	DA	Analog	REEL MOTOR DRIVE	OUT	
4	PWM	PWM	REEL MOTOR DRIVE	OUT	
5	Port 6 4	N-ch OPEN DRAIN	FF	OUT	NORMAL : (High), REC mode : (Low)
6	Port 6 3	N-ch OPEN DRAIN	REC START (L)	OUT	POWER ON : (Low), POWER OFF : (High)
7	Port 6 2	N-ch OPEN DRAIN	POWER ON (L)/OFF	OUT	EE/REC : (Low), PB : (High)
8	Port 6 1	N-ch OPEN DRAIN	EE (L)	OUT	SP mode : (Low), LP mode : (High)
9	Port 6 0	N-ch OPEN DRAIN	SP (L)	OUT	
10	AN 7	Analog	OPERATION SW-1	IN	
11	AN 6	Analog	OPERATION SW-2	IN	
12	AN 5	Analog	OPERATION SW-3	IN	
13	AN 4	Analog	EXP DATA	OUT	16 bit Serial data to EXPAND IC
14	Port 4 3	N-ch OPEN DRAIN	AVG FM	IN	AVERAGE FM
15	Port 4 2	N-ch OPEN DRAIN	DET V	IN	S-VHS/VHS PB detection, VHS : (Low), S-VHS (High)
16	Port 4 1	N-ch OPEN DRAIN	SECAM (L)	IN	SECAM detection; SECAM : (Low)
17	Port 4 0	N-ch OPEN DRAIN	S MODE	OUT	VHS : (Low), S-VHS (High)
18	Port 3 7	N-ch OPEN DRAIN	VP ON	OUT	V. PULSE ON
19	Port 3 6	N-ch OPEN DRAIN	LP SPECIAL (L)	OUT	LP mode only, PB : (High), X2/SEARCH FF/SEARCH REW : (Low)
20	Port 3 5	N-ch OPEN DRAIN	AT LED (L)	OUT	
21	Port 3 4	N-ch OPEN DRAIN	SLOW/STILL (L)	OUT	NORMAL : (High), SLOW/STILL : (Low)
22	Port 3 3	N-ch OPEN DRAIN	SLOW PULSE	OUT	NORMAL : (High), SLOW : ⎍⎍⎍, F ADV : ⎍
23	Port 3 2	N-ch OPEN DRAIN	CAPSTAN FG	IN	SP/LP/EP detection, BACK-SPACE COUNT.
24	Port 3 1	N-ch OPEN DRAIN	SRL DATA	OUT	16 bit Serial data to SERVO circuit.
25	Port 3 0	N-ch OPEN DRAIN	SRL CLOCK	OUT	16 bit Serial data to SERVO circuit.
26	$\overline{INT}$-1		REMOTE	IN	16-bit Serial
27	CN Vss		GND	IN	
28	$\overline{RESET}$		RESET (L)	IN	AC IN RESET
29	X IN	–	CLOCK	IN	
30	X OUT	–	CLOCK	OUT	6 MHz
31	ϕ		NC	–	
32			GND		
33	Port 5 7	with Input Latch	CTL PULSE	IN	SP/LP/EP detection
34	Port 5 6	with Input Latch	DRUM FF	IN	DRUM rotation timing
35	Port 5 5	with Input Latch	SUPPLY REEL FG	IN	REEL rotation detect
36	Port 5 4	with Input Latch	TAKE-UP REEL FG	IN	REEL rotation detect
37	Port 5 3	High Impedance	CASSETTE SENSOR (L)	IN	CASSETTE HOUSING detection.
38	Port 5 2	High Impedance	REMOTE PAUSE (L)	IN	REMOTE PAUSE Input: PAUSE ON: (Low), PAUSE OFF : (High)
39	Port 5 1	High Impedance	MODE SW-1 (L)	IN	MECHANISM mode detection.
40	Port 5 0	High Impedance	MODE SW-2 (L)	IN	MECHANISM mode detection.
41	Port 1 7	N-ch OPEN DRAIN	REC SAFETY SW (L)	IN	REC SAFETY SW : (High)
42	Port 1 6	N-ch OPEN DRAIN	START SENS. (L)	IN	START SENSOR (Low)
43	Port 1 5	N-ch OPEN DRAIN	END SENS. (L)	IN	END SENSOR (Low)
44	Port 1 4	N-ch OPEN DRAIN	S CASSETTE SW (L)	IN	S CASSETTE detection, S-TAPE : (Low), NORMAL TAPE : (High)
45	Port 1 3	N-ch OPEN DRAIN	REEL (–)	OUT	REEL MOTOR REVERSE (High) : IN2 ⑧
46	Port 1 2	N-ch OPEN DRAIN	REEL (+)	OUT	REEL MOTOR FOWARD (High) : IN1 ⑤
47	Port 1 1	N-ch OPEN DRAIN	CAP (–)	OUT	CAPSTAN MOTOR REVERSE (High) : IN ⑤
48	Port 1 0	N-ch OPEN DRAIN	CAP (+)	OUT	CAPSTAN MOTOR FOWARD (High) : IN2 ⑥
49	Port 0 7	N-ch OPEN DRAIN	INDEX	IN/OUT	NORMAL : (Low), INDEX : (High)
50	Port 0 6	N-ch OPEN DRAIN	CTL ERASE	OUT	NORMAL : (Low), ERASE : (High)
51	Port 0 5	N-ch OPEN DRAIN	SERVO (L)	OUT	NORMAL : (Low), CAPSTAN DRIVE : (High)
52	Port 0 4	N-ch OPEN DRAIN	D.O. CTL (L)	IN	D.O. CTL ON : (Low)
53	Port 0 3	N-ch OPEN DRAIN	N MODE	OUT	REC, EE : (Low). PB (High)
54	Port 0 2	N-ch OPEN DRAIN	MUTE (L)	OUT	MUTE : (Low)
55	Port 0 1	N-ch OPEN DRAIN	HiFi REC START (L)	OUT	REC START : (Low), NORMAL : (High)
56	Port 0 0	N-ch OPEN DRAIN	FE CTL (L)	OUT	FLYING ERASE HEAD CTL, ERASE ON : (Low), OFF : (High)
57	Port 2 7	C MOS	L.C. MOTOR CTL-3	OUT	IN3 ③
58	Port 2 6	C MOS	L.C. MOTOR CTL-2	OUT	IN2 ②
59	Port 2 5	C MOS	L.C. MOTOR CTL-1	OUT	IN1 ①
60	Port 2 4	C MOS	STROBE	IN	
61	Port 2 3	C MOS	DATA 3	IN/OUT	4 bit TM bus
62	Port 2 2	C MOS	DATA 2	IN/OUT	4 bit TM bus
63	Port 2 1	C MOS	DATA 1	IN/OUT	4 bit TM bus
64	Port 2 0	C MOS	DATA 0	IN/OUT	4 bit TM bus

6.2 TIMER/DISPLAY CONTROL CIRCUIT

6.2.1 Timer CPU pin functions (IC1)

Pin No.	Symbol	Label	IN/OUT	Contents
1	S3	KS D	OUT	KEY SCAN PULSE OUTPUT
2	S2	" C		
3	S1	" B		
4	S0	" A		
5	P00	POWER DOWN (H)	IN	POWER DOWN DET
6	P01	DSP SERIAL CLOCK	OUT	
7	P02	DSP SERIAL DATA		
8	P03	TEST (L)	IN	CLOCK ADJUSTMENT
9	P10	REMOTE	IN	16-bit serial
10	P11	VPS DAVN	IN	VPS DATA DET (E, EG only)
11	P12	BUSY	IN	
12	P13	CNT PULSE	IN	CTL PULSE (REAL TIME COUNTER)
13	P20	MECHACON DATA 0	IN/OUT	T-M BUS
14	P21	" 1		
15	P22	" 2		
16	P23	" 3		
17	P30	DSP CE (L)	OUT	DISPLAY SERIAL DATA CHIP ENABLE
18	P31	SERIAL DATA	IN/OUT	8-bit VPS SERIAL DATA between Timer CPU and VPS decoder
19	P32	SERIAL CLOCK	OUT	
20	P33	DSP OFF	OUT	NC
21	P60	TUNER DATA 0	IN/OUT	T-T BUS
22	P61	" 1		
23	P62	" 2		
24	P63	" 3		
25	P40	KS 0	IN	KEY SCAN DATA INPUT
26	P41	" 1		
27	P42	" 2		
28	P43	" 3		
29	PP0	FMA CTL	OUT	AUX : (Low), TUNER : (High)
30	X1	SYSTEM CLOCK	IN	4.19 MHz
31	X2			
32	Vss	GND		
33	XT1	GND		
34	XT2	–		
35	P50	AUX (L)	OUT	AUX: (Low), TUNER : (High)
36	P51	TUNER STROBE	OUT	
37	P52	MECHACON STROBE	OUT	
38	P53	TEXT	OUT	TUNER : (Low), TEX : (High) (E, EG only)
39	$\overline{\text{RESET}}$	RESET (L)	IN	
40	T0	–	–	–
41	T1			
42	T2			
43	T3			
44	T4			
45	T5			
46	T6			
47	T7			
48	T8			
49	T9			
50	T10/PH3	RESET OUT	OUT	TUNER RESET : (High)
51	T11/PH2	–	–	–
52	T12/PH1	NICAM CTL	OUT	(EK only)
53	T13/PH0	SIMUL (L)	OUT	INPUT SELECT CTL SIMUL CASTIN : (Low)
54	T14/S11	KSL	OUT	KEY SCAN PULSE OUTPUT
55	T15/S10	KSK		
56	VLOAD	GND	IN	S0–S9 GND
57	VPRE	GND		
58	S9	KS J	OUT	KEY SCAN PULSE OUTPUT
59	S8	" I		
60	S7	" H		
61	S6	" G		
62	S5	" F		
63	S4	" E		
64	V_{DD}	5 V	IN	

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